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8 IN THE UNITED STATES DISTRICT COURT  
9 FOR THE DISTRICT OF IDAHO  
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11 UNITED STATES OF AMERICA and )  
12 STATE OF IDAHO )

13 Plaintiffs, )

14 v. )

15 UNION PACIFIC RAILROAD COMPANY; )  
16 STAUFFER MANAGEMENT COMPANY; )  
17 RHONE-POULENC, INC. )

18 Defendants. )  
19

CIVIL ACTION NO.

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## CONSENT DECREE

### I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA") filed a complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9606 and 9607, and Section 7003 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6973.

1           B.     The United States in its complaint seeks,  
2 inter alia: (1) reimbursement of certain costs incurred and to be  
3 incurred by EPA and the Department of Justice for response  
4 actions in connection with the Bunker Hill Superfund Site  
5 ("Site") in Shoshone County, Idaho, together with accrued  
6 interest; and (2) performance of studies and response work by the  
7 Defendants at the Site consistent with the National Oil and  
8 Hazardous Substance Pollution Contingency Plan, 40 C.F.R. Part  
9 300 (as amended) ("NCP").

10           C.     In accordance with the NCP and Section 121(f)(1)(F)  
11 of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA formally notified the  
12 State on November 3, 1992, of negotiations with potentially  
13 responsible parties regarding the implementation of the remedial  
14 design and remedial action for the Site, and EPA has provided the  
15 State with an opportunity to participate in such negotiations and  
16 be a party to this Consent Decree.

17           D.     The State of Idaho ("State") has joined the  
18 complaint against the Defendants pursuant to Section 107 of  
19 CERCLA, 42 U.S.C. § 9607, and relevant state law.

20           E.     EPA formally notified the United States Department  
21 of the Interior, the United States Forest Service, and the  
22 Coeur d'Alene Tribe on November 3, 1992, of negotiations with  
23 potentially responsible parties regarding the release of  
24 hazardous substances that may have resulted in injury to natural  
25 resources that are or may be under their trusteeship. However,  
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1 the notification letter further stated that natural resource  
2 damages would not be a subject of negotiations.

3 F. The Defendants that have entered into this Consent  
4 Decree do not admit any liability to the Plaintiffs arising out  
5 of the transactions or occurrences, including releases, alleged  
6 in the complaint.

7 G. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605,  
8 EPA placed the Bunker Hill facility on the National Priorities  
9 List, set forth at 40 C.F.R. Part 300, Appendix B, by publication  
10 in the Federal Register on September 8, 1983, 48 Fed. Reg. 40658.

11 H. The Site has been damaged by over 100 years of  
12 mining and 65 years of smelting activity, as well as a variety of  
13 other natural and man-made events. Heavy metals have been  
14 released into soils, surface water and groundwater throughout the  
15 Site to varying degrees through a combination of occurrences  
16 including airborne particulate dispersion, alluvial deposition of  
17 tailings through various mechanisms, including the flooding of  
18 the extensive floodplain area within the Site, and other  
19 contaminant movement from both on-Site and off-Site sources.

20 I. For the purposes of conducting the Remedial  
21 Investigation and Feasibility Study ("RI/FS"), the Site has been  
22 divided into Populated Areas and Non-Populated Areas. A separate  
23 RI/FS and Record of Decision was performed for each of these  
24 identified areas.



1 J. In April 1991, EPA and the State completed the  
2 Populated Areas RI/FS. Pursuant to Section 117 of CERCLA,  
3 42 U.S.C. § 9617, EPA published notice of the completion of the  
4 FS and of the proposed plan for the Residential Soil Operable  
5 Unit remedial action on April 26-30, 1991, in the Shoshone News  
6 Press, a major local newspaper of general circulation. EPA  
7 provided an opportunity for written and oral comments from the  
8 public on the proposed plan for remedial action. A public  
9 hearing was held on May 23, 1991, to answer questions and take  
10 comments. A copy of the transcript of the public meeting is  
11 available to the public as part of the administrative record upon  
12 which the Regional Administrator based the selection of the  
13 response action.

14 K. The decision by EPA on the remedial action to be  
15 implemented for the Residential Soil Operable Unit of the Site is  
16 embodied in a final Record of Decision (the "1991 ROD") which was  
17 executed on August 30, 1991, by EPA and the State. The 1991 ROD  
18 includes a responsiveness summary to the public comments. Notice  
19 of the final plan was published in accordance with Section 117(b)  
20 of CERCLA, 42 U.S.C. § 9617(b).

21 L. In June 1992, EPA and some of the PRPs completed the  
22 Non-Populated Areas RI/FS. According to UP and the Stauffer  
23 Entities, they participated in the Non-Populated Areas RI/FS.  
24 Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA  
25 published notice of the completion of the FS and of the proposed  
26

1 plan for remedial action on June 13, 1992, in the Shoshone News  
2 Press and the Spokesman-Review, major local newspapers of general  
3 circulation. EPA provided an opportunity for written and oral  
4 comments from the public on the proposed plan for remedial  
5 action. A public meeting was held on June 25, 1992, to answer  
6 questions and take comments. A copy of the transcript of the  
7 public meeting is available to the public as part of the  
8 administrative record upon which the Regional Administrator based  
9 the selection of the response action.

10 M. The decision by EPA on the remedial action to be  
11 implemented for the Non-Populated areas and the remaining  
12 populated areas of the Site is embodied in a ROD (the "1992  
13 ROD"), executed on September 22, 1992, by EPA and the State of  
14 Idaho. The 1992 ROD includes a responsiveness summary to the  
15 public comments. Notice of the final plan was published in  
16 accordance with Section 117(b) of CERCLA, 42 U.S.C. § 9617(b).

17 N. Throughout the years, a number of removal actions  
18 have been conducted at this Site.

19 O. The Panhandle Health District (PHD) has agreed to  
20 seek to adopt and implement an environmental health code which  
21 will provide the basic regulatory framework for implementation of  
22 an Institutional Control Program (ICP). PHD agrees to work with  
23 the local governments within the Site to incorporate enabling  
24 language into their planning and zoning ordinances that will  
25 complement the environmental health code and aid in the  
26

1 implementation of the ICP. If a local government is unable or  
2 does not adopt the necessary enabling provisions, PHD will seek  
3 to implement the ICP through its own authorities. The existence  
4 of the ICP, as well as the existence of the provisions for the  
5 ICP's enforcement, through either the PHD's environmental health  
6 code or the planning and zoning ordinances of local governments  
7 within the Site, are an acceptable and integral component of  
8 remedial actions for the 1991 ROD and 1992 ROD.

9 P. This Consent Decree addresses certain enumerated  
10 liabilities of the Settling Defendants at the Site. Pursuant to  
11 this Consent Decree, the Settling Defendants are performing  
12 specified Work. Settling Defendants are making specified  
13 payments to the Plaintiffs for the ICP. The Stauffer Entities  
14 are making a specified payment for the Phosphoric Acid/Fertilizer  
15 Plant subarea. The Stauffer Entities are paying a premium to  
16 address any past costs at the Site and any liability which the  
17 Stauffer Entities may have for the non-NIPC areas of the Site.  
18 Union Pacific is paying a premium to address any past costs at  
19 the Site and any liability that Union Pacific may have for non-  
20 Union Pacific areas at the Site. Pursuant to this Consent  
21 Decree, the Settling Defendants are receiving the covenants not  
22 to sue provided in Section XXII of this Consent Decree and the  
23 contribution protection provided in Section XXIV of this Consent  
24 Decree.

1 Q. Based on the information presently available to EPA,  
2 EPA believes that the Work will be properly and promptly  
3 conducted by the Settling Defendants if conducted in accordance  
4 with the requirements of this Consent Decree and its attachments.

5 R. Solely for the purposes of Section 113(j) of CERCLA,  
6 42 U.S.C. § 9613(j), the Remedial Action and the Work to be  
7 performed by the Settling Defendants shall constitute a response  
8 action taken or ordered by the President.

9 S. Except as otherwise provided in this Consent Decree,  
10 in signing this Decree the Settling Defendants deny any and all  
11 legal and equitable liability and reserve all defenses under any  
12 federal, state, local or tribal statute, regulation, or common  
13 law for any claim, endangerment, nuisance, response, removal,  
14 remedial or other costs or damages incurred or to be incurred by  
15 the United States, the State, or other entities or persons or any  
16 natural resource damages as a result of the release or threat of  
17 release of hazardous substances to, at, from or near the Site.

18 Pursuant to 42 U.S.C. § 9622(d)(1)(B), entry of this Consent  
19 Decree is not an acknowledgment by Settling Defendants that any  
20 release or threatened release of a hazardous substance  
21 constituting an imminent and substantial endangerment to human  
22 health or the environment has occurred or exists at the Site.  
23 Settling Defendants do not admit and retain the right to  
24 controvert any of the factual or legal statements or  
25 determinations made herein in any judicial or administrative  
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1 proceeding except in an action to enforce this Consent Decree or  
2 as provided in Paragraph 100. Settling Defendants do agree,  
3 however, to the Court's jurisdiction over this matter. This  
4 Consent Decree shall not be admissible in any judicial or  
5 administrative proceeding against any Settling Defendant, over  
6 its objection, as proof of liability or an admission of any fact  
7 dealt with herein, but it shall be admissible in an action to  
8 enforce this Consent Decree. This Consent Decree shall not be  
9 admissible in any judicial or administrative proceeding brought  
10 by or on behalf of any Natural Resource Trustee for natural  
11 resource damages, or in any judicial or administrative proceeding  
12 brought against any Natural Resource Trustee, over the objection  
13 of any Natural Resource Trustee, as proof of or a defense to  
14 liability or as an admission of any fact dealt with herein.

15 T. The Parties recognize, and the Court by entering  
16 this Consent Decree finds, that this Consent Decree has been  
17 negotiated by the Parties in good faith and implementation of  
18 this Consent Decree will expedite the cleanup of the Site and  
19 will avoid prolonged and complicated litigation between the  
20 Parties, and that this Consent Decree is fair, reasonable, and in  
21 the public interest.

22 NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:  
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II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendants. Solely for the purposes of this Consent Decree and the underlying complaints, Settling Defendants waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settling Defendants shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. Notwithstanding any provision of this Consent Decree, nothing in this Consent Decree shall be construed to create any obligation on or right of action against the United States or the State for the performance of any response actions.

3. This Consent Decree applies to and is binding upon the United States and the State and upon Settling Defendants and their heirs, successors, and assigns. Any change in ownership or corporate status of a Settling Defendant including, but not limited to, any transfer of assets or real or personal property shall in no way alter such Settling Defendants' responsibilities under this Consent Decree.

1           4.    The Settling Defendants shall provide a copy of this  
2 Consent Decree to each contractor hired by them, respectively, to  
3 perform the Work (as defined below) required by this Consent  
4 Decree and to each person representing the Settling Defendants  
5 with respect to the Site or the Work and shall condition all  
6 contracts entered into hereunder upon performance of the Work in  
7 conformity with the terms of this Consent Decree. Settling  
8 Defendants or their respective contractors shall provide written  
9 notice of the Consent Decree to all subcontractors hired to  
10 perform any portion of the Work required by this Consent Decree.  
11 Settling Defendants shall nonetheless be responsible for ensuring  
12 that their respective contractors and subcontractors perform the  
13 Work contemplated herein in accordance with this Consent Decree.  
14 With regard to the activities undertaken pursuant to this Consent  
15 Decree, each contractor and subcontractor shall be deemed to be  
16 in a contractual relationship with the Settling Defendants within  
17 the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C.  
18 § 9607(b)(3).

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20                                   IV.   DEFINITIONS

21           5.    Unless otherwise expressly provided herein, terms  
22 used in this Consent Decree which are defined in CERCLA or in  
23 regulations promulgated under CERCLA shall have the meaning  
24 assigned to them in CERCLA or in such regulations. Whenever  
25 terms listed below are used in this Consent Decree or in the  
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1 attachments attached hereto and incorporated hereunder, the  
2 following definitions shall apply:

3       A. "Administrative Record" means all documents,  
4 including any attachments, enclosures, or other supporting  
5 materials thereto, compiled, indexed by EPA or the State of Idaho  
6 and maintained by EPA as the Administrative Records in support of  
7 the 1991 ROD or the 1992 ROD;

8       B. "CERCLA" means the Comprehensive Environmental  
9 Response, Compensation, and Liability Act of 1980, as amended,  
10 42 U.S.C. §§ 9601, et seq;

11       C. "Consent Decree" shall mean this Decree and all  
12 attachments hereto which are listed in Section XXX (Attachments).  
13 In the event of conflict between this Decree and any Attachment,  
14 this Decree shall control;

15       D. "Contractor" or "subcontractor" means the company or  
16 companies retained by or on behalf of the Settling Defendants to  
17 undertake and accomplish the Work and associated activities  
18 required by this Consent Decree;

19       E. "Day" means a calendar day unless expressly stated  
20 to be a working day. "Working day" shall mean a day other than a  
21 Saturday, Sunday, or State or Federal holiday. In computing any  
22 period of time under this Consent Decree, where the last day  
23 would fall on a Saturday, Sunday, or State or Federal holiday,  
24 the period shall run until the close of business of the next  
25 working day;



1 F. "EPA" means the United States Environmental  
2 Protection Agency and any successor departments or agencies;

3 G. "Future Response Costs" shall mean all costs,  
4 including, but not limited to, direct and indirect costs, that  
5 the United States and the State incur on or after the lodging of  
6 this Consent Decree in reviewing or developing plans, reports,  
7 and other items pursuant to this Consent Decree, verifying the  
8 Work, or otherwise implementing, overseeing, or enforcing this  
9 Consent Decree, including, but not limited to, payroll costs,  
10 contractor costs, travel costs, laboratory costs, the costs  
11 incurred pursuant to Section VII (Additional Response Actions),  
12 Section VIII (Periodic Review), Section X (Access) (including,  
13 but not limited to, attorneys fees and the amount of just  
14 compensation), Section XVI (Emergency Response Costs), and  
15 Paragraph 92 of Section XXII (Covenants Not To Sue by  
16 Plaintiffs). Future Response Costs shall also include all costs,  
17 including direct and indirect costs, paid by the United States  
18 and the State in connection with the Consent Decree between the  
19 date of lodging of this Consent Decree and the effective date of  
20 the Consent Decree;

21 H. "ICP" means the Institutional Control Program which  
22 provides a regulatory framework to ensure that activities  
23 involving excavations, building, development, construction and  
24 renovation and grading within the Bunker Hill Superfund Site  
25 provide for the installation and maintenance of Barriers and  
26

1 implementation of other contaminant management standards to  
2 preclude the migration of, and particularly, human exposure to  
3 contaminants within the Site as necessary to protect the public  
4 health and environment;

5 I. "National Contingency Plan" or "NCP" means the  
6 National Oil and Hazardous Substances Pollution Contingency Plan  
7 promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605,  
8 codified at 40 C.F.R. Part 300, including, but not limited to,  
9 any amendments thereto;

10 J. "NIPC Area" means the North Idaho Phosphate Company  
11 Area delineated in the map attached as Attachment C which  
12 includes the Phosphoric Acid/Fertilizer Plant subarea and the A-4  
13 Gypsum subarea encompassing portions of Magnet Gulch. Within  
14 this Area the "Phosphoric Acid/Fertilizer Plant" subarea or "PAFP  
15 subarea" shall mean the subarea designated as such and delineated  
16 in the map attached as Attachment C. Also within this Area, the  
17 "A-4 Gypsum subarea" shall mean the subarea designated as such  
18 and delineated in the map attached as Attachment C;

19 K. "Operation and Maintenance" or "O & M" means all  
20 activities required by the Statement of Work ("SOW") to maintain  
21 the effectiveness of the Remedial Action;

22 L. "Paragraph" means a portion of this Consent Decree  
23 identified by an Arabic numeral or an upper case letter;

24 M. "Parties" means the United States, the State of  
25 Idaho, and the Settling Defendants;

1 N. "Past Response Costs" shall mean all costs,  
2 including, but not limited to, direct and indirect costs and  
3 interest, that the United States and the State incurred and paid  
4 with regard to the Site prior to lodging of the Consent Decree;

5 O. "Performance Standards" means those cleanup  
6 standards, standards of control, and other substantive  
7 requirements, criteria, or limitations set forth in the RODs, as  
8 clarified by the respective SOWs, except that "To Be Considered"  
9 criteria referenced in the RODs shall only be deemed Performance  
10 Standards if so specified in a SOW;

11 P. "Phosphoric Acid/Fertilizer Plant Remedial Action"  
12 or "PAFP Remedial Action" means the remedial design and remedial  
13 action that the Governments will undertake for the PAFP subarea.

14 Q. "Plaintiffs" means the United States and the State  
15 of Idaho;

16 R. "RCRA" means the Solid Waste Disposal Act, as  
17 amended, 42 U.S.C. §§ 6901, et seq. (also known as the Resource  
18 Conservation and Recovery Act);

19 S. "Record(s) of Decision" or "ROD(s)" means both the  
20 1991 ROD and the 1992 ROD, relating to the Site, and all  
21 attachments thereto. These RODs are attached hereto as  
22 Attachment A and incorporated herein by reference;

23 T. "Remedial Action" means those activities, except for  
24 O & M, to be undertaken separately by the Settling Defendants to  
25 implement the final plans and specifications submitted separately  
26

1 by the Settling Defendants pursuant to the Scope of Work and Work  
2 Plans approved by EPA for their Respective Areas;

3 U. "Remedial Design Report" (or "RDR") means the  
4 document submitted by the Stauffer Entities to implement the  
5 Work in the A-4 Gypsum subarea required under this Consent  
6 Decree. The draft Stauffer Entities RDR is attached hereto as  
7 Attachment G;

8 V. "Remedial Action Work Plans" or "RAWP" means the  
9 documents submitted separately by the Settling Defendants  
10 pursuant to this Consent Decree and described more fully in the  
11 SOW;

12 W. "Respective Areas" means with respect to Union  
13 Pacific, the "Union Pacific Area" and with respect to the  
14 Stauffer Entities, the "NIPC Area";

15 X. "Rhone-Poulenc, Inc." means the New York corporation  
16 of said name, which is the successor in interest by merger to  
17 Stauffer Chemical Company;

18 Y. "Section" means a portion of this Consent Decree  
19 identified by a Roman numeral;

20 Z. "Settling Defendants" means each company, the  
21 Stauffer Entities (Stauffer Management Company and Rhone-Poulenc,  
22 Inc.) and Union Pacific, separately, so that each applicable  
23 provision applies separately (not jointly) to Union Pacific or  
24 the Stauffer Entities;

1           AA. The "Bunker Hill Superfund Site" or "Site" means an  
2 approximately twenty-one (21) square mile area in Shoshone  
3 County, Idaho, running approximately seven (7) miles in the  
4 east-west direction and approximately three (3) miles in the  
5 north-south direction as more accurately delineated on Attachment  
6 B, the Bunker Hill Superfund Site Allocation Map, excluding any  
7 hazardous substances in the South Fork of the Coeur d'Alene River  
8 which flow into the Site;

9           BB. "State" means the State of Idaho;

10          CC. "Statement of Work" or "SOW" means the documents  
11 setting forth the Work to be performed by each Settling Defendant  
12 for its Respective Area, as set forth in Attachments E and F to  
13 this Consent Decree, and any modifications made in accordance  
14 with this Consent Decree;

15          DD. "Stauffer Management Company" means the Delaware  
16 corporation of said name, which is the indemnitor of certain  
17 environmental liabilities of Stauffer Chemical Company, including  
18 liabilities of Stauffer Chemical Company that relate to the Site;

19          EE. "Stauffer Entities" means Stauffer Management  
20 Company and Rhone-Poulenc, Inc.;

21          FF. "Supervising Contractors" means the Settling  
22 Defendants or the principal contractors retained by the Settling  
23 Defendants to supervise and direct the implementation of the Work  
24 under this Consent Decree;

1 GG. "Union Pacific Railroad Company" or "Union Pacific"  
2 means the Utah Corporation of that name;

3 HH. "Union Pacific Area" means the area delineated as  
4 such on the map attached as Attachment D, including, but not  
5 limited to, the railroad Right-Of-Way;

6 II. "United States" means the United States of America;

7 JJ. "Waste Material" shall mean (1) any "hazardous  
8 substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14);  
9 (2) any pollutant or contaminant under Section 101(33) of CERCLA,  
10 42 U.S.C. § 9601(33); (3) any "solid waste" under Section  
11 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any "hazardous  
12 waste" under Idaho Code § 39-4403(8); and

13 KK. The "Work" shall mean all activities Settling  
14 Defendants are required to perform separately under this Consent  
15 Decree for their Respective Areas, except those required by  
16 Section XXVI (Retention of Records).

17  
18 V. GENERAL PROVISIONS

19 6. Objectives of the Parties

20 The objectives of the Parties in entering into this  
21 Consent Decree are to protect public health or welfare or the  
22 environment at the Site by the design and implementation of  
23 response actions at the Site by the Settling Defendants and to  
24 reimburse response costs of the Plaintiffs. By entering into  
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1 this Consent Decree, the Parties also intend to resolve claims  
2 and liabilities as set forth in this Consent Decree.

3 7. Approval of SOWs

4 The United States and the State have reviewed and  
5 approved the SOWs attached hereto, and have found them consistent  
6 with the RODs, the NCP, and the requirements of relevant EPA  
7 remedial design guidance documents. The United States and State  
8 have reviewed the draft RDR, specified in the SOW, which  
9 establishes the conceptual design for the development of the  
10 final draft RDR. Union Pacific has submitted a draft RAWP which  
11 is attached hereto and which will be reviewed and finalized in  
12 accordance with the Consent Decree.

13 8. Commitments by the Stauffer Entities

14 a. The Stauffer Entities shall finance and perform the  
15 Work as it relates to the NIPC Area in accordance with this  
16 Consent Decree and all plans, standards, specifications, and  
17 schedules set forth in or developed and approved by EPA pursuant  
18 to this Consent Decree. The Stauffer Entities shall also  
19 reimburse the United States and the State for Future Response  
20 Costs as provided in and limited by this Consent Decree.

21 b. The Stauffer Entities shall finance and perform the  
22 activities required by the RODs as set forth in the relevant SOW  
23 (Attachment E) and the RDR (Attachment G) for the A-4 Gypsum  
24 subarea. This includes Remedial Design and Remedial Action for  
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1 the A-4 Gypsum subarea and long-term Operation and Maintenance  
2 for the A-4 Gypsum subarea.

3 c. Within sixty (60) days of entry of this Consent  
4 Decree, the Stauffer Entities shall pay one hundred fifty  
5 thousand dollars (\$ 150,000) to finance their portion of an  
6 Institutional Controls Program for the Site. This payment shall  
7 be paid to the State of Idaho which will place this money in a  
8 trust fund for use in implementing aspects of the Institutional  
9 Controls Program. This payment shall constitute full  
10 satisfaction of the Stauffer Entities' obligations for the ICP.

11 d. Within thirty (30) days of entry of this Consent  
12 Decree, the Stauffer Entities shall pay a premium of five hundred  
13 thousand dollars (\$ 500,000) to EPA, and five hundred thousand  
14 dollars (\$ 500,000) to the State of Idaho. The Plaintiffs shall  
15 utilize the premium for remedial action and operation and  
16 maintenance activities within the Site. The provision of such  
17 remedial action shall not require the assurances of Section  
18 104(c)(3) of CERCLA, 42 U.S.C. § 9604(c)(3).

19 e. Within thirty (30) days of entry of this Consent  
20 Decree, the Stauffer Entities shall pay EPA eight hundred and  
21 fifty thousand dollars (\$ 850,000) to finance the Remedial Design  
22 and Remedial Action, and any Operation and Maintenance for the  
23 Phosphoric Acid/Fertilizer Plant. The Governments will perform  
24 the PAFP Remedial Action in a manner fully consistent with RODs.  
25 Within a reasonable time after the completion of the PAFP



1 Remedial Action, EPA will provide notice to the Stauffer Entities  
2 that the remediation is completed.

3 f. The obligations of the Stauffer Entities to finance  
4 and perform their obligations and to pay amounts owed the United  
5 States and the State under this Consent Decree are solely the  
6 obligations of the Stauffer Entities and are not joint or several  
7 obligations of Union Pacific.

8 9. Commitments by Union Pacific

9 a. Union Pacific shall finance and perform the Work as  
10 it relates to the Union Pacific Area in accordance with this  
11 Consent Decree and all plans, standards, specifications, and  
12 schedules set forth in or developed and approved by EPA pursuant  
13 to this Consent Decree. Union Pacific shall also reimburse the  
14 United States and the State for Future Response Costs as provided  
15 in this Consent Decree.

16 b. Union Pacific shall finance and perform the  
17 activities required by the RODs as set forth in the Union Pacific  
18 Statement of Work and the Union Pacific RAWP for the Union  
19 Pacific Area. Union Pacific's obligations include the Remedial  
20 Design and the Remedial Action for the Union Pacific Right-Of-Way  
21 and the long term Operation and Maintenance of the Right-Of-Way.  
22 Union Pacific will have access to a repository at the Site for  
23 disposal of Waste Materials, including treated Waste Materials,  
24 from the Union Pacific Area prior to certification of completion  
25 of the Remedial Action at no cost to Union Pacific, except that  
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1 Union Pacific will be responsible for costs associated with  
2 treatment of Waste Materials exceeding principal threat levels.  
3 After certification of completion of the Remedial Action, Union  
4 Pacific shall provide for disposal of Waste Materials from the  
5 Union Pacific Area at its own cost.

6 c. Within sixty (60) days of entry of this Consent  
7 Decree, Union Pacific shall pay one hundred fifty thousand  
8 dollars (\$ 150,000) to finance its portion of an Institutional  
9 Controls Program for the Site. This payment shall be paid to the  
10 State of Idaho which will place this money in a trust fund for  
11 use in implementing aspects of the Institutional Controls  
12 Program. This payment shall constitute full satisfaction of  
13 Union Pacific's obligations for the ICP.

14 d. Within thirty (30) days of entry of this Consent  
15 Decree, Union Pacific shall pay a premium of four hundred  
16 twenty-five thousand dollars (\$ 425,000) to EPA and four hundred  
17 twenty-five thousand dollars (\$ 425,000) to the State of Idaho.  
18 The Plaintiffs shall utilize the premium for remedial action and  
19 operation and maintenance activities within the Site. The  
20 provision of such remedial action shall not require the  
21 assurances of Section 104(c)(3) of CERCLA, 42 U.S.C.  
22 § 9604(c)(3).

23 e. The obligations of Union Pacific to finance and  
24 perform its obligations and to pay amounts owed the United States  
25 and the State under this Consent Decree are solely the  
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obligations of Union Pacific and are not joint or several obligations of the Stauffer Entities.

10. Termination of Administrative Orders

Upon entry of this Consent Decree, any and all Administrative Orders relating to the Site existing prior to the date of lodging, including the following Administrative Orders, shall be deemed satisfied and withdrawn as to the Settling Defendants: Administrative Order and Settlement Agreement for 1990 Residential Removal Action at the Bunker Hill Superfund Site, EPA Docket No. 1090-05-35-106; Bunker Hill Superfund Site Administrative Order on Consent: Hillside Revegetation/Stabilization and Removal Action, EPA Docket No. 1090-10-01-106; Administrative Order on Consent for 1991 Removal Action at the Bunker Hill Superfund Site, EPA Docket No. 1091-06-17-106(A); Administrative Order on Consent for 1992 Removal Action at the Bunker Hill Superfund Site, EPA Docket No. 1092-04-14-106; and Unilateral Administrative Order for Portion of the Bunker Hill Residential Soils Remedial Design and Remedial Action No. 1093-08-14-106 (August 24, 1993).

11. Compliance With Applicable Law

All activities undertaken by Settling Defendants pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable Federal and State laws and regulations. Settling Defendants must also comply with all applicable or relevant and appropriate requirements of all

1 Federal and State environmental laws as set forth in the RODs as  
2 clarified by the respective SOWs, except that "To Be Considered"  
3 criteria referenced in the RODs shall only be considered  
4 applicable or relevant and appropriate requirements if so  
5 specified in an SOW. The activities conducted pursuant to this  
6 Consent Decree, if approved by EPA, shall be considered to be  
7 consistent with the NCP.

8 12. Permits

9 a. As provided in Section 121(e) of CERCLA,  
10 42 U.S.C. § 9621(e), and § 300.5 of the NCP, no permit shall be  
11 required for any portion of the Work conducted entirely on-Site.  
12 Where any portion of the Work requires a federal or state permit  
13 or approval, Settling Defendants shall submit timely and complete  
14 applications and take all other actions necessary to obtain all  
15 such permits or approvals.

16 b. The Settling Defendants may seek relief under the  
17 provisions of Section XIX (Force Majeure) of this Consent Decree  
18 for any delay in the performance of the Work resulting from a  
19 failure to obtain, or a delay in obtaining, any permit required  
20 for the Work.

21 c. This Consent Decree is not, and shall not be  
22 construed to be, a permit issued pursuant to any federal or state  
23 statute or regulation, nor shall any releases at or from the Site  
24 subsequent to entry of this Consent Decree constitute federally  
25 permitted releases unless such releases are made in compliance

1 with a federal or state permit specifically authorizing such  
2 releases.

3 13. Notice of Obligations to Successors-in-Title

4 a. Within thirty (30) days after entry of this Consent  
5 Decree, any Settling Defendant who owns property within the Site  
6 shall record a certified copy of this Consent Decree with the  
7 Recorder's Office in Shoshone County, State of Idaho.

8 Alternatively, within thirty (30) days after entry of this  
9 Consent Decree, any Settling Defendant who owns property within  
10 the Site shall submit for EPA approval under Section XII  
11 (Submissions Requiring Agency Approval), a listing of the county  
12 assessor's parcel number for the property owned by such Settling  
13 Defendant within the Site and a summary of the terms of this  
14 Consent Decree. This summary shall include a description of  
15 where the full Consent Decree can be found. Upon approval of its  
16 summary, the Settling Defendant shall have fifteen (15) days to  
17 submit for recording by the appropriate recorder's office in  
18 Shoshone County, State of Idaho, the summary of the terms of this  
19 Consent Decree as approved by EPA.

20 b. Thereafter, each deed, title, or other instrument  
21 conveying an interest in the property of such Settling Defendants  
22 included in the Site shall contain a notice stating that the  
23 property is subject to this Consent Decree and any lien retained  
24 by the United States, and shall reference the recorded location  
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1 of the Consent Decree and any restrictions applicable to the  
2 property under this Consent Decree.

3       c. The obligations of each Settling Defendant with  
4 respect to the provision of access under Section X (Access) and  
5 the implementation of any applicable institutional controls shall  
6 be binding upon such Settling Defendants and any and all persons  
7 who subsequently acquire any such interest or portion thereof  
8 (hereinafter "Successors-in-Title"). Within thirty (30) days  
9 after the entry of this Consent Decree, each Settling Defendant  
10 who owns property within the Site shall record at the appropriate  
11 Recorder's Office a notice of obligation to provide access under  
12 Section X (Access) and related covenants. Each subsequent  
13 instrument conveying an interest to any such property included in  
14 the Site shall reference the recorded location of such notice and  
15 covenants applicable to the property.

16       d. Any Settling Defendant and any Successor-in-Title  
17 shall, at least thirty (30) days prior to the conveyance of any  
18 such interest, give written notice of this Consent Decree to the  
19 grantee and written notice to EPA and the State of the proposed  
20 conveyance, including the name and address of the grantee, and  
21 the date on which notice of the Consent Decree was given to the  
22 grantee. In the event of any such conveyance, the Settling  
23 Defendants' obligations under this Consent Decree, including  
24 their obligations to provide or secure access pursuant to Section  
25 X (Access), shall continue to be met by the Settling Defendants.

1 In addition, if the United States and the State approve, the  
2 grantee may perform some or all of the Work under this Consent  
3 Decree; provided, however, the grantee may, upon notice by the  
4 Settling Defendants to the United States and State, perform the  
5 Operation and Maintenance without prior approval by the United  
6 States and the State. In no event shall the conveyance of an  
7 interest in property that includes, or is a portion of, the Site  
8 release or otherwise affect the liability of the Settling  
9 Defendants to comply with the Consent Decree.

10  
11 VI. PERFORMANCE OF THE WORK BY SETTTLING DEFENDANTS

12 14. Selection of Supervising Contractor.

13 a. All aspects of the Work to be performed by Settling  
14 Defendants pursuant to Sections VI (Performance of the Work by  
15 Settling Defendants), VII (Additional Response Actions), VIII  
16 (EPA Periodic Review), and IX (Quality Assurance, Sampling and  
17 Data Analysis) of this Consent Decree shall be under the  
18 direction and supervision of the Supervising Contractor, the  
19 selection of which shall be subject to disapproval by EPA after a  
20 reasonable opportunity for review and comment by the State.  
21 Within thirty (30) days after the lodging of this Consent Decree,  
22 Settling Defendants shall notify EPA and the State, in writing,  
23 of the name, title, and qualifications of any contractor proposed  
24 to be a Supervising Contractor. EPA will issue a notice of  
25 disapproval or an authorization to proceed. If at any time  
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1 thereafter Settling Defendants propose to change a Supervising  
2 Contractor, Settling Defendants shall give such notice to EPA and  
3 the State and must obtain an authorization to proceed from EPA,  
4 after a reasonable opportunity for review and comment by the  
5 State, before the new Supervising Contractor performs, directs,  
6 or supervises any Work under this Consent Decree.

7           b. If EPA disapproves a proposed Supervising  
8 Contractor, EPA will notify Settling Defendants, in writing.  
9 Settling Defendants shall submit to EPA and the State a list of  
10 contractors, including the qualifications of each contractor,  
11 that would be acceptable to them within thirty (30) days of  
12 receipt of EPA's disapproval of the contractor previously  
13 proposed. EPA will provide written notice of the names of any  
14 contractor(s) that it disapproves and an authorization to proceed  
15 with respect to any of the other contractors. Settling  
16 Defendants may select any contractor from that list that is not  
17 disapproved and shall notify EPA and the State of the name of the  
18 contractor selected within twenty-one (21) days of EPA's  
19 authorization to proceed.

20           c. If EPA fails to provide written notice of its  
21 authorization to proceed or disapproval as provided in this  
22 paragraph and this failure prevents the Settling Defendants from  
23 meeting one or more deadlines in a plan approved by the EPA  
24 pursuant to this Consent Decree, Settling Defendants may seek  
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1 relief under the provisions of Section XIX (Force Majeure)  
2 hereof.

3 15. Remedial Design and Remedial Action

4 a. All Work under this Consent Decree is subject to  
5 approval by EPA. Settling Defendants shall, in accordance with  
6 their respective SOWs, prepare and submit required deliverables  
7 for approval by EPA pursuant to Section XII (Submissions  
8 Requiring Agency Approval). Settling Defendants shall implement  
9 the Work upon approval by EPA, in consultation with the State, of  
10 the deliverables required by the SOWs, including the Health and  
11 Safety Plans, the Quality Assurance Project Plans, the Sampling  
12 Plan, or other plans, designs or reports.

13 b. Settling Defendants shall submit deliverables and  
14 perform the Work, required under their respective SOWs, RDR and  
15 RAWPs, in accordance with the schedules set forth and referred to  
16 therein. Once deliverables are approved pursuant to Section XII  
17 (Submissions Requiring Agency Approval), they shall be deemed  
18 incorporated into and be enforceable under this Consent Decree by  
19 this reference.

20 16. Settling Defendants shall only commence on-Site  
21 physical activities required to implement the Work with EPA's  
22 approval.

23 17. The Work performed by the Settling Defendants  
24 pursuant to this Consent Decree shall include the obligation to  
25 achieve the Performance Standards.

1           18. Settling Defendants acknowledge and agree that  
2 nothing in this Consent Decree, the SOWs or any deliverable  
3 required by this Consent Decree constitutes a warranty or  
4 representation of any kind by Plaintiffs that compliance with the  
5 work requirements set forth in the SOWs will achieve the  
6 Performance Standards. Settling Defendants' compliance with the  
7 work requirements shall not foreclose Plaintiffs from seeking  
8 compliance with all terms and conditions of this Consent Decree,  
9 including, but not limited to, the applicable Performance  
10 Standards.

11           19. Settling Defendants shall, prior to any off-Site  
12 shipment of Waste Material to an out-of-state waste management  
13 facility or any intra-state off-site shipment of hazardous waste,  
14 provide written notification to the appropriate state  
15 environmental official in the receiving facility's state and to  
16 the EPA Project Coordinator of such shipment. However, this  
17 notification requirement shall not apply to any off-Site  
18 shipments when the total volume of all such shipments will not  
19 exceed ten (10) cubic yards.

20           a. The Settling Defendants shall include in the written  
21 notification the following information, where available: (1) the  
22 name and location of the facility to which the Waste Material is  
23 to be shipped; (2) the type and quantity of the Waste Material to  
24 be shipped; (3) the expected schedule for the shipment of the  
25 Waste Material; and (4) the method of transportation. The  
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1 Settling Defendants shall notify the state in which the planned  
2 receiving facility is located of major changes in the shipment  
3 plan, such as a decision to ship the Waste Material to another  
4 facility within the same state, or to a facility in another  
5 state.

6           b. If it is determined that waste will be shipped to a  
7 waste management facility, the identity of the receiving facility  
8 and state will be determined by the Settling Defendants following  
9 the award of the contract for Remedial Action construction. The  
10 Settling Defendants shall provide the information required by  
11 Paragraph 19(a) as soon as practicable after the award of the  
12 contract and before the Waste Material is actually shipped.

13  
14                   VII. ADDITIONAL RESPONSE ACTIONS

15           20. In the event that prior to Certification of  
16 Completion of the Remedial Action pursuant to Paragraph 52.b, EPA  
17 determines or a Settling Defendant proposes that additional  
18 response actions are necessary in either of the Respective Areas  
19 to meet the Performance Standards or to carry out the remedy  
20 selected in the ROD as clarified by the SOWs, RDR, and RAWPs,  
21 notification of such additional response actions shall be  
22 provided to the appropriate Project Coordinator for the other  
23 parties.

24           21. Within thirty (30) days of receipt of notice from  
25 EPA pursuant to Paragraph 20 that additional response actions are

1 necessary (or such longer time as may be specified by EPA), the  
2 Settling Defendant for the Area shall submit for approval by EPA,  
3 after reasonable opportunity for review and comment by the State,  
4 a work plan for the additional response actions. Upon approval  
5 of the plan pursuant to Section XII (Submissions Requiring Agency  
6 Approval), the Settling Defendant shall implement the plan for  
7 additional response actions in accordance with the schedule  
8 contained therein.

9       22. Any additional response actions that the Settling  
10 Defendants propose are necessary to meet the Performance  
11 Standards or to carry out the remedy selected in the ROD, as  
12 clarified by the SOWs, RDR, and RAWPs, shall be subject to  
13 approval by EPA, after reasonable opportunity for review and  
14 comment by the State, and, if authorized by EPA, shall be  
15 completed by the Settling Defendants in accordance with plans,  
16 specifications, and schedules approved or established by EPA  
17 pursuant to Section XII (Submissions Requiring Agency Approval).

18       23. Settling Defendants may invoke the procedures set  
19 forth in Section XX (Dispute Resolution) to dispute EPA's  
20 determination that additional response actions are necessary to  
21 meet the Performance Standards or to carry out the remedy  
22 selected in the ROD, as clarified by the SOWs, RDR and RAWPs.  
23 Such a dispute shall be resolved pursuant to Paragraphs 67-70 of  
24 this Consent Decree.

VIII. EPA PERIODIC REVIEW

24. Settling Defendants shall conduct any studies and investigations as requested by EPA in order to permit EPA to conduct reviews of the Remedial Action at least every five (5) years as required by Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations to assure that human health and the environment are being protected by the Remedial Action.

25. If required by Sections 113(k)(2) or 117 of CERCLA, 42 U.S.C. §§ 9613(k)(2) or 9617, Settling Defendants and the public will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and to submit written comments for the record during the public comment period. After the period for submission of written comments is closed, the Regional Administrator, EPA Region 10, or his/her delegate will determine in writing whether further response actions are appropriate.

26. If the Regional Administrator, EPA Region 10, or his/her delegate determines that information received, in whole or in part, during the review conducted pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), indicates that the Remedial Action is not protective of human health and the environment, the Settling Defendants shall undertake any further response actions for their Respective Areas EPA has determined

1 are appropriate, unless their liability for such further response  
2 actions is barred by the Covenants Not to Sue set forth in  
3 Section XXII (Covenants Not To Sue By Plaintiff). The Settling  
4 Defendants shall submit a plan for such work to EPA for approval  
5 in accordance with the procedures set forth in Section VI  
6 (Performance of the Work by Settling Defendants) and shall  
7 implement the plan approved by EPA. The Settling Defendants may  
8 invoke the procedures set forth in Section XX (Dispute  
9 Resolution) to dispute (1) EPA's determination that the Remedial  
10 Action is not protective of human health and the environment,  
11 (2) EPA's selection of the further response actions ordered as  
12 arbitrary and capricious or otherwise not in accordance with law,  
13 or (3) EPA's determination that the Settling Defendants'  
14 liability for the further response actions requested is reserved  
15 in Paragraphs 86, 87, or 91 or otherwise not barred by the  
16 Covenants Not to Sue set forth in Section XXII (Covenants Not To  
17 Sue By Plaintiff).

18  
19 IX. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS

20 27. Settling Defendants shall use quality assurance,  
21 quality control, and chain-of-custody procedures for all samples  
22 in accordance with EPA's "Interim Guidelines and Specifications  
23 For Preparing Quality Assurance Project Plans," December 1980,  
24 (QAMS-005/80); "Data Quality Objective Guidance,"  
25 (EPA/540/G87/003 and 004); "EPA NEIC Policies and Procedures  
26

1 Manual," May 1978, revised November 1984, (EPA 330/9-78-001-R);  
2 and subsequent amendments to such guidelines upon written  
3 notification by EPA to Settling Defendants of such amendment.  
4 Amended guidelines shall apply only to procedures conducted after  
5 such notification. Prior to the commencement of any monitoring  
6 project under this Consent Decree, Settling Defendants shall  
7 submit to EPA for approval, after a reasonable opportunity for  
8 review and comment by the State, Quality Assurance Project Plans  
9 ("QAPP") that are consistent with the SOW, the NCP, and  
10 applicable guidance documents. If relevant to the proceeding,  
11 the Parties agree that validated sampling data generated in  
12 accordance with the QAPP(s) and reviewed and approved by EPA  
13 shall be admissible as evidence, without objection, in any  
14 proceeding under this Decree. Settling Defendants shall ensure  
15 that EPA and State personnel and their authorized representatives  
16 are allowed access at reasonable times to all laboratories  
17 utilized by Settling Defendants in implementing this Consent  
18 Decree. In addition, Settling Defendants shall ensure that such  
19 laboratories shall analyze all samples submitted by EPA pursuant  
20 to the QAPP for quality assurance monitoring. Settling  
21 Defendants shall ensure that the laboratories they utilize for  
22 the analysis of samples taken pursuant to this Decree perform all  
23 analyses according to accepted or approved EPA methods. Settling  
24 Defendants shall ensure that all laboratories they use for  
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1 analysis of samples taken pursuant to this Consent Decree  
2 participate in an EPA or EPA-equivalent QA/QC program.

3       28. Upon request, the Settling Defendants shall allow  
4 split or duplicate samples to be taken by EPA and the State or  
5 their authorized representatives. Settling Defendants shall  
6 notify EPA and the State not less than fourteen (14) days in  
7 advance of any sample collection activity unless shorter notice  
8 is agreed to by EPA. In addition, EPA and the State shall have  
9 the right to take any additional samples related to performance  
10 of the Work or implementation of the Consent Decree that EPA or  
11 the State deems necessary. EPA and the State shall provide  
12 reasonable notice to the Settling Defendants whenever such  
13 samples will be taken. Upon request, EPA and the State shall  
14 allow the Settling Defendants to take split or duplicate samples  
15 of any samples they take as part of the Plaintiffs' oversight of  
16 the Settling Defendants' implementation of the Work.

17       29. Settling Defendants shall submit to EPA and the  
18 State four (4) copies of the results of all sampling and/or tests  
19 or other data obtained or generated by or on behalf of Settling  
20 Defendants with respect to the Work or the implementation of this  
21 Consent Decree unless EPA agrees otherwise.

22       30. Notwithstanding any provision of this Consent  
23 Decree, the United States and the State hereby retain all of  
24 their information gathering and inspection authorities and  
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rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

X. ACCESS

31. Commencing upon the date of lodging of this Consent Decree, the Settling Defendants agree to provide the United States, the State, and their representatives, including EPA and its contractors, access at all reasonable times to the Site and any other property to which access is required for the implementation of this Consent Decree, to the extent access to such property is controlled by Settling Defendants, for the purposes of conducting any activity related to this Consent Decree including, but not limited to:

- a. Monitoring the Work;
- b. Verifying any data or information submitted to the United States;
- c. Conducting investigations relating to contamination at or near the Site;
- d. Obtaining samples;
- e. Assessing the need for, planning, or implementing additional response actions at or near the Site;
- f. Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendants or their agents in accordance with Section XXV (Access To Information); and
- g. Assessing Settling Defendants' compliance with this Consent Decree.

32. To the extent that the Site or any other property to which access is required for the implementation of this Consent

1 Decree is owned or controlled by persons other than Settling  
2 Defendants, Settling Defendants shall use best efforts to secure  
3 from such persons access for Settling Defendants, as well as for  
4 the United States and the State and their representatives,  
5 including, but not limited to, their contractors, as necessary to  
6 effectuate this Consent Decree. For the purposes of this  
7 paragraph "best efforts" includes the payment of reasonable sums  
8 of money in consideration of access. To the extent property is  
9 owned by a Potentially Responsible Party (PRP) identified by EPA,  
10 "best efforts" will not require payment. If any access required  
11 to complete the Work is not obtained within forty-five days of  
12 the date of lodging of this Consent Decree, or within forty-five  
13 (45) days of the date EPA notifies the Settling Defendants, in  
14 writing, that additional access beyond that previously secured is  
15 necessary, Settling Defendants shall promptly notify the United  
16 States, and shall include in that notification a summary of the  
17 steps Settling Defendants have taken to attempt to obtain access.  
18 The United States or the State may, as it deems appropriate,  
19 assist Settling Defendants in obtaining access. Settling  
20 Defendants shall reimburse the United States or the State, in  
21 accordance with the procedures in Section XVII (Reimbursement of  
22 Response Costs), for all costs incurred in obtaining access.

23 33. Notwithstanding any provision of this Consent  
24 Decree, the United States and the State retain all of their  
25 access authorities and rights, including enforcement authorities  
26

1 related thereto, under CERCLA, RCRA, and any other applicable  
2 statute or regulations.

3  
4 XI. REPORTING REQUIREMENTS

5 34. In addition to any other requirement of this Consent  
6 Decree, the Settling Defendants shall submit four (4) copies to  
7 EPA and two (2) copies to the State of written monthly progress  
8 reports that: (a) describe the actions taken toward achieving  
9 compliance with this Consent Decree during the previous month;  
10 (b) include a summary of all results of sampling and tests and  
11 all other data received or generated by the Settling Defendants  
12 or their contractors or agents in connection with implementation  
13 of this Consent Decree in the previous month unless such  
14 information has already been submitted to EPA and the State;  
15 (c) identify all deliverables required by this Consent Decree  
16 completed and submitted during the previous month; (d) describe  
17 all actions, including, but not limited to, data collection and  
18 implementation of the SOWs, which are scheduled for the next  
19 month, and provide other information relating to the progress of  
20 activities, including, but not limited to, as relevant, critical  
21 path diagrams, Gantt charts and Pert charts; (e) include  
22 information regarding percentage of completion, unresolved delays  
23 encountered or anticipated that may affect the future schedule  
24 for implementation of the Work, and a description of efforts made  
25 to mitigate those delays or anticipated delays; (f) include any  
26

1 modifications to any work plans, or schedules that Settling  
2 Defendants have proposed to EPA and the State or that have been  
3 approved by EPA; and (g) describe all activities undertaken in  
4 support of the Community Relations Plan during the previous month  
5 and those to be undertaken in the next month. Settling  
6 Defendants shall submit these progress reports to EPA and the  
7 State by the tenth (10th) day of every month following the  
8 lodging of this Consent Decree until EPA notifies the Settling  
9 Defendants pursuant to Paragraph 53(b) of Section XV  
10 (Certification of Completion). If requested by EPA or the State,  
11 Settling Defendants shall also provide briefings for EPA or the  
12 State to discuss the progress of the Work.

13         35. The Settling Defendants shall notify EPA and the  
14 State of any change in the schedule described in the monthly  
15 progress report for the performance of any activity, including,  
16 but not limited to, data collection and implementation of the  
17 SOWs and any work plans, no later than seven (7) days prior to  
18 the performance of the activity.

19         36. Upon the occurrence of any event during performance  
20 of the Work that Settling Defendants are required to report  
21 pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section  
22 304 of the Emergency Planning and Community Right-to-know Act  
23 (EPCRA), 42 U.S.C. § 11004, Settling Defendants shall within  
24 twenty-four (24) hours of the onset of such event orally notify  
25 the EPA Project Coordinator or the Alternate EPA Project  
26

1 Coordinator (in the event of the unavailability of the EPA  
2 Project Coordinator), or, in the event that neither the EPA  
3 Project Coordinator or Alternate EPA Project Coordinator is  
4 available, the Emergency Response Section, Region 10, United  
5 States Environmental Protection Agency. Settling Defendants  
6 shall also notify the Project Coordinator for the State. These  
7 reporting requirements are in addition to the reporting required  
8 by CERCLA Section 103 or EPCRA Section 304.

9         37. Within twenty (20) days of the onset of such an  
10 event, Settling Defendants shall furnish to Plaintiffs a written  
11 report, signed by the Settling Defendants' Project Coordinator,  
12 setting forth the events which occurred and the measures taken,  
13 and to be taken, in response thereto. Within thirty (30) days of  
14 the conclusion of such an event, the Settling Defendants' Project  
15 Coordinator shall submit a report setting forth all actions taken  
16 in response thereto.

17         38. The Settling Defendants shall submit four (4) copies  
18 to EPA of all plans, reports, and data required by the SOWs or  
19 any other approved work plans in accordance with the schedules  
20 set forth in such plans. The Settling Defendants shall submit  
21 two (2) copies of all such plans, reports, and data to the State.

22         39. All reports and other documents submitted by  
23 Settling Defendants to EPA and the State, other than the monthly  
24 progress reports referred to above, which purport to document  
25 Settling Defendants' compliance with the terms of this Consent  
26

Decree shall be signed and submitted by the Settling Defendants' Project Coordinator.

XII. SUBMISSIONS REQUIRING AGENCY APPROVAL

40. After review of any plan, report, or other item which is required to be submitted for approval pursuant to this Consent Decree, EPA, after reasonable opportunity for review and comment by the State, shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Settling Defendants modify the submission; or (e) any combination of the above.

41. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Subparagraph 40(a), (b), or (c), Settling Defendants shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XX (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 40(c) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XXI (Stipulated Penalties).

1           42. a.    Upon receipt of a notice of disapproval  
2 pursuant to Paragraph 40(d), Settling Defendants shall, within  
3 fourteen (14) days or such other time as specified by EPA in such  
4 notice, correct the deficiencies and resubmit the plan, report,  
5 or other item for approval. Any stipulated penalties applicable  
6 to the submission, as provided in Section XXI (Stipulated  
7 Penalties), shall continue to accrue during the fourteen (14) day  
8 period or otherwise specified period but shall not be payable  
9 unless the resubmission is disapproved or modified due to a  
10 material defect as provided in Paragraphs 43 and 44.

11           b.    Notwithstanding the receipt of a notice of  
12 disapproval pursuant to Paragraph 40(d), Settling Defendants  
13 shall proceed, at the direction of EPA, to take any action  
14 required by any non-deficient portion of the submission.  
15 Implementation of any non-deficient portion of a submission shall  
16 not relieve Settling Defendants of any liability for stipulated  
17 penalties under Section XXI (Stipulated Penalties) as to any  
18 deficient portion.

19           43.   In the event that a resubmitted plan, report or  
20 other item, or portion thereof, is disapproved by EPA, EPA may  
21 again require the Settling Defendants to correct the  
22 deficiencies, or may itself address the deficiencies, in  
23 accordance with the preceding paragraphs. EPA also retains the  
24 right to amend or develop the plan, report or other item.  
25 Settling Defendants shall implement any such plan, report, or  
26

1 item as amended or developed by EPA, subject only to their right  
2 to invoke the procedures set forth in Section XX (Dispute  
3 Resolution).

4           44. If upon resubmission, a plan, report, or item is  
5 disapproved or modified by EPA due to a material defect, Settling  
6 Defendants shall be deemed to have failed to submit such plan,  
7 report, or item timely and adequately unless the Settling  
8 Defendants invoke the dispute resolution procedures set forth in  
9 Section XX (Dispute Resolution) and EPA's action is overturned  
10 pursuant to that Section. The provisions of Section XX (Dispute  
11 Resolution) and Section XXI (Stipulated Penalties) shall govern  
12 the implementation of the Work and accrual and payment of any  
13 stipulated penalties during Dispute Resolution. If EPA's  
14 disapproval or modification is upheld, stipulated penalties shall  
15 accrue for such violation from the date on which the initial  
16 submission was originally required, as provided in Section XXI  
17 (Stipulated Penalties), and shall continue to accrue for thirty  
18 (30) days after the due date of the resubmission after which date  
19 stipulated penalties shall stop accruing unless and until EPA  
20 notifies Settling Defendants that it has modified or disapproved  
21 the resubmittal because it contains a material defect, upon which  
22 date accrual of stipulated penalties shall resume and shall  
23 continue to accrue through the final day of the correction of the  
24 noncompliance or completion of the activity.



1           45. All plans, reports, and other items required to be  
2 submitted to EPA under this Consent Decree shall, upon approval  
3 or modification by EPA, be enforceable under this Consent Decree.  
4 In the event EPA approves or modifies a portion of a plan,  
5 report, or other item required to be submitted to EPA under this  
6 Consent Decree, the approved or modified portion shall be  
7 enforceable under this Consent Decree.

8  
9                   XIII. PROJECT COORDINATORS

10           46. Within twenty (20) days of lodging this Consent  
11 Decree, the Settling Defendants, the State, and EPA will notify  
12 each other, in writing, of the name, address, and telephone  
13 number of their designated Project Coordinators and Alternate  
14 Project Coordinators. If a Project Coordinator or Alternate  
15 Project Coordinator initially designated is changed, the identity  
16 of the successor will be given to the other parties at least  
17 five (5) working days before the changes occur, unless  
18 impracticable, but in no event later than the actual day the  
19 change is made. The Settling Defendants' Project Coordinators  
20 shall be subject to disapproval by EPA, which disapproval shall  
21 not be unreasonably invoked, and shall have the technical  
22 expertise sufficient to adequately oversee all aspects of the  
23 Work. The Settling Defendants' Project Coordinators shall not be  
24 an attorney for any of the Settling Defendants in this matter.  
25 The Settling Defendants' Project Coordinators may assign other

1 representatives, including other contractors, to serve as a Site  
2 representative for oversight of performance of daily operations  
3 during remedial activities.

4 47. Plaintiffs may designate other representatives,  
5 including, but not limited to, EPA and State employees, and  
6 federal and State contractors and consultants, to observe and  
7 monitor the progress of any activity undertaken pursuant to this  
8 Consent Decree. EPA's Project Coordinator and Alternate Project  
9 Coordinator shall have the authority lawfully vested in a  
10 Remedial Project Manager ("RPM") and an On-Scene Coordinator  
11 ("OSC") by the NCP, 40 C.F.R. Part 300. In addition, the EPA  
12 Project Coordinator, his/her alternate or, to the extent  
13 consistent with the Memorandum of Agreement between EPA and the  
14 State, the State Project Coordinator or his/her alternate shall  
15 have authority, consistent with the NCP, to halt any Work  
16 required by this Consent Decree and to take any necessary  
17 response action when s/he determines that conditions at the Site  
18 constitute an emergency situation or may present an immediate  
19 threat to public health or welfare or the environment due to  
20 release or threatened release of Waste Material.

21 48. The respective Project Coordinators will meet with  
22 EPA and the State, at a minimum, on a monthly basis unless  
23 otherwise determined by EPA. This meeting may be held by  
24 telephone conference.  
25  
26

1           49. EPA and the State have entered into a Memorandum of  
2 Agreement ("MOA") which defines the respective roles of EPA and  
3 the State and is attached hereto as Attachment I. Pursuant to  
4 this MOA, the State will have significant oversight  
5 responsibilities.

6  
7           XIV. ASSURANCE OF ABILITY TO COMPLETE WORK

8           50. Within sixty (60) days of entry of this Consent  
9 Decree, Settling Defendants shall establish and maintain  
10 sufficient financial assurance for performance of their  
11 Respective Work in one of the following forms:

- 12           (a) A surety bond guaranteeing performance of their  
13           Respective Work;  
14           (b) One or more irrevocable letters of credit equalling  
15           the total estimated cost of their Respective Work;  
16           (c) A trust fund;  
17           (d) A guarantee to perform their Respective Work by one  
18           or more parent corporations or subsidiaries, or by  
19           one or more unrelated corporations that have a  
20           substantial business relationship with at least one  
21           of the Settling Defendants; or  
22           (e) A demonstration that the Settling Defendant  
23           satisfies the requirements of 40 C.F.R. Part  
24           264.143(f).

25           51. If the Settling Defendants seek to demonstrate the  
26 ability to complete their Respective Work through a guarantee by  
27 a third party pursuant to Paragraph 50(d) of this Consent Decree,  
28 Settling Defendants shall demonstrate that the guarantor  
satisfies the requirements of 40 C.F.R. Part 264.143(f). If

1 Settling Defendants seek to demonstrate their ability to complete  
2 their Respective Work by means of the financial test or the  
3 corporate guarantee pursuant to Paragraph 50(d) or (e), they  
4 shall resubmit sworn statements conveying the information  
5 required by 40 C.F.R. Part 264.143(f) annually, on or before the  
6 end of the first quarter of each calendar year. In the event  
7 that EPA, after a reasonable opportunity for review and comment  
8 by the State, determines at any time that the financial  
9 assurances provided pursuant to this Section are inadequate,  
10 Settling Defendants shall, within thirty (30) days of receipt of  
11 notice of EPA's determination, obtain and present to EPA for  
12 approval one of the other forms of financial assurance listed in  
13 Paragraph 50 of this Consent Decree. Settling Defendants'  
14 inability to demonstrate financial ability to complete their  
15 Respective Work shall not excuse performance of any activities  
16 required under this Consent Decree.

17  
18 XV. CERTIFICATION OF COMPLETION

19 52. Completion of a Remedial Action

20 a. Within ninety (90) days after either Settling  
21 Defendant concludes that its respective Remedial Action has been  
22 fully performed and the Performance Standards have been attained  
23 in accordance with the RODs as clarified by the applicable SOWs,  
24 the Settling Defendant shall schedule and conduct a pre-  
25 certification inspection to be attended by Settling Defendant,

1 EPA, and the State. If, after the pre-certification inspection,  
2 the Settling Defendant still believes that the Remedial Action  
3 has been fully performed and the Performance Standards have been  
4 attained in accordance with the RODs as clarified by the SOWs, it  
5 shall submit a written report requesting certification to EPA for  
6 approval, with a copy to the State, pursuant to Section XII  
7 (Submissions Requiring Agency Approval) within thirty (30) days  
8 of the inspection. In the report, a registered professional  
9 engineer shall state that the Remedial Action has been completed  
10 in full satisfaction of the requirements of the applicable SOW,  
11 RDR and RAWP. In the report, the Settling Defendant's Project  
12 Coordinator shall state that the Remedial Action has been  
13 completed in full satisfaction of the requirements of this  
14 Consent Decree. The written report shall include as-built  
15 drawings signed and stamped by a professional engineer. The  
16 report shall contain the following statement, signed by a  
17 responsible corporate official of the Settling Defendant or the  
18 Settling Defendant's Project Coordinator:

19 "To the best of my knowledge, after thorough investigation,  
20 I certify that the information contained in or accompanying  
21 this submission is true, accurate and complete. I am aware  
22 that there are significant penalties for submitting false  
23 information, including the possibility of fine and  
24 imprisonment for knowing violations."

25 If, after completion of the pre-certification inspection and  
26 receipt and review of the written report, EPA, after reasonable  
27 opportunity to review and comment by the State, determines that  
28 the Remedial Action has not been completed in accordance with

1 this Consent Decree or that the Performance Standards have not  
2 been achieved, EPA will notify the Settling Defendant, in  
3 writing, of the activities that must be undertaken to complete  
4 the Remedial Action and achieve the Performance Standards and  
5 require the Settling Defendant to submit a schedule to EPA for  
6 approval pursuant to Section XII (Submissions Requiring Agency  
7 Approval). The Settling Defendant shall perform all activities  
8 described in the notice in accordance with the specifications and  
9 schedules established pursuant to this paragraph, subject to its  
10 right to invoke the dispute resolution procedures set forth in  
11 Section XX (Dispute Resolution).

12           b. If EPA concludes, based on the initial or any  
13 subsequent report requesting Certification of Completion and  
14 after a reasonable opportunity for review and comment by the  
15 State, that the Remedial Action is fully performed and the  
16 Performance Standards have been achieved in accordance with the  
17 RODs as clarified by the SOWs, EPA will so certify in writing to  
18 the Settling Defendant. This certification shall constitute the  
19 Certification of Completion of the Remedial Action for purposes  
20 of this Consent Decree, including, but not limited to,  
21 Section XXII (Covenants Not to Sue by Plaintiffs). Certification  
22 of Completion of the Remedial Action shall not affect the  
23 Settling Defendant's obligations under this Consent Decree that  
24 continue beyond the Certification of Completion.

53. Completion of the Work

a. Within ninety (90) days after either Settling Defendant concludes that all phases of its respective Work (including O & M) have been fully performed, the Settling Defendant shall schedule and conduct a pre-certification inspection to be attended by EPA and the State. If, after the pre-certification inspection, the Settling Defendant still believes that the Work has been fully performed, the Settling Defendant shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of the applicable SOWs, RDR and RAWPs. In the report, the Settling Defendant's Project Coordinator shall state that the Remedial Action has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of the Settling Defendant or the Settling Defendant's Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

If, after review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify Settling Defendant in writing of the activities that must be undertaken to complete the

1 Work. EPA will set forth in the notice a schedule for  
2 performance of such activities consistent with the Consent Decree  
3 or require the Settling Defendant to submit a schedule to EPA for  
4 approval pursuant to Section XII (Submissions Requiring Agency  
5 Approval). The Settling Defendant shall perform all activities  
6 described in the notice in accordance with the specifications and  
7 schedules established therein, subject to their right to invoke  
8 the dispute resolution procedures set forth in Section XX  
9 (Dispute Resolution).

10 b. If EPA concludes, based on the initial or any  
11 subsequent request for Certification of Completion by the  
12 Settling Defendant and after a reasonable opportunity for review  
13 and comment by the State, that the Work has been fully performed  
14 in accordance with this Consent Decree, EPA will so notify the  
15 Settling Defendant, in writing.

16  
17 XVI. EMERGENCY RESPONSE

18 54. In the event of any action or occurrence arising in  
19 connection with the performance of the Work which causes or  
20 threatens a release of Waste Material at or from the Site that  
21 constitutes an emergency situation or may present an immediate  
22 threat to public health or welfare or the environment, the  
23 Settling Defendants shall, subject to Paragraph 55, immediately  
24 take all appropriate action to prevent, abate, or minimize such  
25 release or threat of release, and shall immediately notify the  
26



1 Project Coordinators for EPA and the State, or, if they are  
2 unavailable, their alternates. If none of these persons is  
3 available, the Settling Defendants shall notify the EPA Emergency  
4 Response Unit, Region 10. Settling Defendants shall take such  
5 actions in consultation with the EPA Project Coordinator, his/her  
6 alternate and to the extent consistent with the Memorandum of  
7 Agreement between EPA and the State, the State Project  
8 Coordinator or his/her alternate or other available authorized  
9 representatives and in accordance with all applicable provisions  
10 of the Health and Safety Plans, the Contingency Plans, and any  
11 other applicable deliverables developed pursuant to the SOWs. In  
12 the event that Settling Defendants fail to take appropriate  
13 response action as required by this Section, and EPA or, as  
14 appropriate, the State take such action instead, Settling  
15 Defendants shall reimburse EPA and the State all costs of the  
16 response action not inconsistent with the NCP pursuant to Section  
17 XVII (Reimbursement of Response Costs).

18 55. Nothing in the preceding paragraph or in this  
19 Consent Decree shall be deemed to limit any authority of the  
20 United States, or the State, to take, direct, or order all  
21 appropriate action or to seek an order from the Court to protect  
22 human health and the environment or to prevent, abate, respond  
23 to, or minimize an actual or threatened release of Waste Material  
24 on, at, or from the Site.

1           XVII.   PAYMENTS AND REIMBURSEMENT OF RESPONSE COSTS

2           56. a.     Within thirty (30) days of the effective date  
3 of this Consent Decree, Settling Defendants shall pay the United  
4 States the following amounts in the manner set forth below in  
5 Paragraph 56.a.4.:

6                   1. Stauffer Entities shall remit to the United  
7 States the amount of five hundred thousand dollars  
8 (\$500,000) required by paragraph 8.d. of this  
Consent Decree.

9                   2. Stauffer Entities shall remit to the United  
10 States the amount of eight hundred fifty thousand  
11 dollars (\$850,000.) required by paragraph 8.e. of  
this Consent Decree.

12                   3. Union Pacific shall remit to the United States  
13 the amount of four hundred twenty five thousand  
dollars (\$425,000.) required by paragraph 9.d. of  
this Consent Decree.

14                   4. These payments to the United States shall be  
15 made in the form of a certified check made payable  
16 to the "EPA Hazardous Substance Superfund" and  
17 referencing the U.S.A.O. file number \_\_\_\_\_,  
18 the EPA Region and the Site/Spill # 1020 DOJ case  
number 90-11-3-128I with copies sent to the United  
States as specified in Section XXVII (Notices and  
Submissions). The Settling Defendants shall forward  
the certified check to:

19                           U.S. Environmental Protection Agency  
20                           EPA Hazardous Substance Superfund  
21                           P.O. Box 360903M  
                          Pittsburgh, Pennsylvania 15251

22           b. Within thirty (30) days of the effective date of this  
23 Consent Decree, Settling Defendants shall pay the State the  
24 following amounts in the manner set forth below in  
25 Paragraph 56.b.5.:

1. Stauffer Entities shall remit to the State the amount of one hundred fifty thousand dollars (\$150,000) required by paragraph 8.c. of this Consent Decree.

2. Stauffer Entities shall remit to the State the amount of five hundred thousand dollars (\$500,000) required by paragraph 8.d. of this Consent Decree.

3. Union Pacific shall remit to the State the amount of one hundred fifty thousand dollars (\$150,000) required by paragraph 9.c. of this Consent Decree.

4. Union Pacific shall remit to the State the amount of four hundred twenty-five thousand dollars (\$425,000) required by paragraph 9.d. of this Consent Decree.

5. These payments to the State shall be made in the form of certified checks made payable to the "State of Idaho" and shall be placed by the State in the Bunker Hill Cleanup Trust Fund established by the Trust Fund Declaration of the State of Idaho dated May 2, 1994 (Attachment M, Consent Decree, United States of America v. Asarco, Inc., No. CV 94-0207-N-HLR (D. Idaho)). Such money shall be utilized by the Trustee for the purposes specified in paragraphs 8.c and 8.d. and 9.c. and 9.d of this Consent Decree.

57. Union Pacific shall reimburse the United States and the State for all Future Response Costs for the Union Pacific Area, Site/Spill #10Y6, not inconsistent with the NCP incurred by the United States and the State. The Stauffer Entities shall reimburse the United States and the State for all Future Response Costs for the A-4 Gypsum subarea, Site/Spill #10Y5, not inconsistent with the NCP incurred by the United States and the State.

a. The United States will send Settling Defendants a bill requiring payment that includes a Superfund Cost Organization Recovery Enhancement System Report on a periodic

1 basis. Settling Defendants shall make all payments within thirty  
2 (30) days of Settling Defendants' receipt of each bill requiring  
3 payment, except as otherwise provided in Paragraph 58. The  
4 Settling Defendants shall make all payments required by this  
5 paragraph in the form of a certified check or checks made payable  
6 to "EPA Hazardous Substance Superfund" and referencing the  
7 U.S.A.O. file number \_\_\_\_\_, the EPA Region and Site/Spill  
8 #10Y5 or #10Y6, as applicable, and DOJ case number 90-11-3-128I.  
9 The Settling Defendants shall forward the certified check(s) to:

10 U.S. Environmental Protection Agency  
11 EPA Hazardous Substance Superfund  
12 P. O. Box 360903M  
Pittsburgh, Pennsylvania 15251

13 and shall send copies of the check(s) to the United States as  
14 specified in Section XXVII (Notices and Submissions).

15 b. Projected State response costs shall be paid by  
16 Settling Defendants in advance. Each year, no later than April  
17 1, the State shall provide Settling Defendants a detailed written  
18 budget for the following budget year. No later than thirty (30)  
19 days prior to the beginning of each budget year (July 1), the  
20 Settling Defendants shall fund the first two quarters of the  
21 estimated budget. No later than thirty (30) days after the end  
22 of each quarter, the State shall provide Settling Defendants with  
23 an accounting of actual response costs incurred in such quarter.  
24 Payments by Settling Defendants of the third and fourth quarter  
25 estimated budget shall be made no later than thirty (30) days  
26 prior to such quarter and shall be reconciled against actual

1 response costs incurred in the preceding quarters. Settling  
2 Defendants shall pay only those costs actually incurred in  
3 implementing oversight activities. Payments required by this  
4 paragraph shall be made by certified check made payable to "Idaho  
5 Department of Health and Welfare" and shall reference this  
6 Consent Decree.

7           58. a. A Settling Defendant may contest payment of any  
8 Future Response Costs under Paragraph 57(a) if it determines that  
9 the United States has made an accounting error or if it alleges  
10 that a cost item that is included represents costs that are  
11 inconsistent with the NCP or does not relate to the Union Pacific  
12 Area or the A-4 Gypsum subarea. Such objection shall be made, in  
13 writing, within thirty (30) days of receipt of the bill and must  
14 be sent to the United States pursuant to Section XXVII (Notices  
15 and Submissions). Any such objection shall specifically identify  
16 the contested Future Response Costs and the basis for objection.  
17 In the event of an objection, the Settling Defendant shall within  
18 the thirty (30) day period pay all uncontested Future Response  
19 Costs to the United States in the manner described in Paragraph  
20 57. Simultaneously, the Settling Defendant shall establish an  
21 interest bearing escrow account in a federally-insured bank duly  
22 chartered in the State of Idaho and remit to that escrow account  
23 funds equivalent to the amount of the contested Future Response  
24 Costs. The Settling Defendant shall send to the United States,  
25 as provided in Section XXVII (Notices and Submissions), a copy of  
26

1 the transmittal letter and check paying the uncontested Future  
2 Response Costs, and a copy of the correspondence that establishes  
3 and funds the escrow account, including, but not limited to,  
4 information containing the identity of the bank and bank account  
5 under which the escrow account is established as well as a bank  
6 statement showing the initial balance of the escrow account.  
7 Simultaneously with establishment of the escrow account, the  
8 Settling Defendant shall initiate the Dispute Resolution  
9 procedures in Section XX (Dispute Resolution). If the United  
10 States prevails in the dispute, within five (5) days of the  
11 resolution of the dispute, the Settling Defendant shall pay the  
12 sums due (with accrued interest) to the United States in the  
13 manner described in Paragraph 57. If the Settling Defendant  
14 prevails concerning any aspect of the contested costs, the  
15 Settling Defendant shall pay that portion of the costs (plus  
16 associated accrued interest) for which it did not prevail to the  
17 United States in the manner described in Paragraph 57(a);  
18 Settling Defendant shall be disbursed any balance of the escrow  
19 account. The dispute resolution procedures set forth in this  
20 paragraph in conjunction with the procedures set forth in Section  
21 XX (Dispute Resolution) shall be the exclusive mechanisms for  
22 resolving disputes regarding the Settling Defendant's obligation  
23 to reimburse the United States for its Future Response Costs.

24           b. In the event a Settling Defendant contends that  
25 payment of estimated response costs to the State in accordance  
26

1 with Paragraph 57(b) would include costs inconsistent with the  
2 NCP, costs resulting from an accounting error or costs not  
3 relating to the Union Pacific Area or the A-4 Gypsum subarea, the  
4 Settling Defendant shall make timely payment of undisputed  
5 estimated response costs and, at the same time, specifically  
6 identify the disputed costs. The Settling Defendant and the  
7 State agree to attempt informal resolution of the dispute during  
8 the fourteen (14) day period following notification by the  
9 Settling Defendant of its objection. At the end of the fourteen  
10 (14) day informal dispute resolution period, Settling Defendant  
11 shall either pay the disputed costs or notify the State that  
12 Settling Defendant will seek judicial review of the disputed  
13 costs on the basis that such costs are either inconsistent with  
14 the NCP or the result of an accounting error.

15 59. In the event that the payments required by  
16 Paragraph 56 are not made within thirty (30) days of the  
17 effective date of this Consent Decree or the payments required by  
18 Paragraph 57(a) are not made within thirty (30) days of the  
19 Settling Defendants' receipt of the bill, Settling Defendants  
20 shall pay interest on the unpaid balance at the rate established  
21 pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607. The  
22 interest on Future Response Costs shall begin to accrue  
23 forty-five (45) days after the Settling Defendants' receipt of  
24 the bill. Interest shall accrue at the rate specified through  
25 the date of the Settling Defendant's payment. Payments of  
26

1 interest made under this paragraph shall be in addition to such  
2 other remedies or sanctions available to Plaintiffs by virtue of  
3 Settling Defendants' failure to make timely payments under this  
4 Section.

5 XVIII. INDEMNIFICATION AND INSURANCE

6 60. The United States and the State do not assume any  
7 liability by entering into this Consent Decree or by virtue of  
8 any designation of Settling Defendants as EPA's authorized  
9 representatives under Section 104(e) of CERCLA,  
10 42 U.S.C. § 9604(e). Each of the Settling Defendants shall  
11 indemnify, save and hold harmless the United States, the State,  
12 and their officials, agents, employees, contractors,  
13 subcontractors, or representatives for or from any and all claims  
14 or causes of action arising from, or on account of, the acts or  
15 omissions of that Settling Defendant, and its respective  
16 officers, directors, employees, agents, contractors,  
17 subcontractors, and any persons acting on its behalf or under its  
18 control, in carrying out activities pursuant to this Consent  
19 Decree, including, but not limited to, any claims arising from  
20 any designation of that Settling Defendant as EPA's authorized  
21 representatives under Section 104(e) of CERCLA, 42 U.S.C.  
22 § 9604(e). Further, each Settling Defendant agrees to pay the  
23 United States and the State all costs it incurs, including, but  
24 not limited to, attorneys fees and other expenses of litigation  
25 and settlement arising from, or on account of, claims made



1 against the United States and the State based on acts or  
2 omissions of that Settling Defendant, its officers, directors,  
3 employees, agents, contractors, subcontractors, and any persons  
4 acting on its behalf or under its control, in carrying out  
5 activities pursuant to this Consent Decree. Neither the United  
6 States nor the State shall be held out as a party to any contract  
7 entered into by or on behalf of Settling Defendants in carrying  
8 out activities pursuant to this Consent Decree. Neither the  
9 Settling Defendants nor any such contractor shall be considered  
10 an agent of the United States or the State.

11           61. Each Settling Defendant waives all claims against  
12 the United States and the State for damages or reimbursement or  
13 for set-off of any payments made or to be made to the United  
14 States or the State, arising from or on account of any contract,  
15 agreement, or arrangement between that Settling Defendant and any  
16 person for performance of Work on or relating to the Site,  
17 including, but not limited to, claims on account of construction  
18 delays. In addition, each of the Settling Defendants shall  
19 indemnify and hold harmless the United States and the State with  
20 respect to any and all claims for damages or reimbursement  
21 arising from or on account of any contract, agreement, or  
22 arrangement between that Settling Defendant, and any person for  
23 performance of Work on or relating to the Site, including, but  
24 not limited to, claims on account of construction delays.

25

26

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62. No later than fifteen (15) days before commencing any on-Site Work, the Settling Defendants shall secure, and each shall maintain until the first anniversary of EPA's Certification of Completion of the Remedial Actions pursuant to Paragraph 52(b) of Section XV (Certification of Completion) comprehensive general liability insurance and automobile insurance with limits of ten million dollars, combined single limit naming the United States and the State as additional insured, unless the Settling Defendant can provide EPA with written documentation that the Settling Defendant is self-insured at least up to ten million dollars and, in addition, provides EPA with written documentation of the Settling Defendant's financial assurance which satisfies the requirements of 40 C.F.R. Part 264.143(f). The self-insurance and financial assurance documentation must be submitted to EPA annually on or before the end of the first quarter of each calendar year. In addition, for the duration of this Consent Decree, the Settling Defendants shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendants in furtherance of this Consent Decree. Prior to commencement of the Work under this Consent Decree, Settling Defendants shall provide to EPA and the State certificates of such insurance and a copy of each insurance policy. Settling Defendants shall resubmit such certificates and

1 copies of policies each year on the anniversary of the effective  
2 date of this Consent Decree. If Settling Defendants demonstrate  
3 by evidence satisfactory to EPA and the State that any contractor  
4 or subcontractor maintains insurance equivalent to that described  
5 above, or insurance covering the same risks but in a lesser  
6 amount, then, with respect to that contractor or subcontractor,  
7 Settling Defendants need provide only that portion of the  
8 insurance described above which is not maintained by the  
9 contractor or subcontractor.

10  
11 XIX. FORCE MAJEURE

12 63. "Force Majeure", for purposes of this Consent  
13 Decree, is defined as any event arising from causes beyond the  
14 control of the Settling Defendants or of any entity controlled by  
15 Settling Defendants, including, but not limited to, their  
16 contractors and subcontractors, that delays or prevents the  
17 performance of any obligation under this Consent Decree despite  
18 Settling Defendants' best efforts to fulfill the obligation. The  
19 requirement that the Settling Defendants exercise "best efforts  
20 to fulfill the obligation" includes using best efforts to  
21 anticipate any potential Force Majeure event and best efforts to  
22 address the effects of any potential Force Majeure event (1) as  
23 it is occurring and (2) following the potential Force Majeure  
24 event, such that the delay is minimized to the greatest extent  
25 possible. "Force Majeure" does not include financial inability  
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1 to complete the Work or a failure to attain the Performance  
2 Standards.

3           64. If any event occurs or has occurred that may delay  
4 the performance of any obligation under this Consent Decree,  
5 whether or not caused by a Force Majeure event, the Settling  
6 Defendants shall notify orally the EPA and State Project  
7 Coordinators or, in their absence, their alternates or, in the  
8 event these representatives are unavailable, the Director of the  
9 Hazardous Waste Division, EPA Region 10, within forty-eight (48)  
10 hours of when Settling Defendants first knew or should have known  
11 that the event might cause a delay. Within five (5) days  
12 thereafter, Settling Defendants shall provide in writing to EPA  
13 and the State an explanation and description of the reasons for  
14 the delay; the anticipated duration of the delay; all actions  
15 taken or to be taken to prevent or minimize the delay; a schedule  
16 for implementation of any measures to be taken to prevent or  
17 mitigate the delay or the effect of the delay; the Settling  
18 Defendants' rationale for attributing such delay to a Force  
19 Majeure event if they intend to assert such a claim; and a  
20 statement as to whether, in the opinion of the Settling  
21 Defendants, such event may cause or contribute to an endangerment  
22 to public health, welfare or the environment. The Settling  
23 Defendants shall include with any notice all available  
24 documentation supporting their claim that the delay was  
25 attributable to a Force Majeure. Failure to comply with the

1 above requirements shall preclude Settling Defendants from  
2 asserting any claim of Force Majeure for that event. Settling  
3 Defendants shall be deemed to have notice of any circumstance of  
4 which their contractors or subcontractors had or should have had  
5 notice.

6           65. If EPA, after a reasonable opportunity for review  
7 and comment by the State, agrees that the delay or anticipated  
8 delay is attributable to a Force Majeure event, the time for  
9 performance of the obligations under this Consent Decree that are  
10 affected by the Force Majeure event will be extended by EPA,  
11 after a reasonable opportunity for review and comment by the  
12 State, for such time as is necessary to complete those  
13 obligations. An extension of the time for performance of the  
14 obligations affected by the Force Majeure event shall not, of  
15 itself, extend the time for performance of any other obligation.  
16 If EPA, after a reasonable opportunity for review and comment by  
17 the State, does not agree that the delay or anticipated delay has  
18 been or will be caused by a Force Majeure event, EPA will notify  
19 the Settling Defendants, in writing, of its decision. If EPA,  
20 after a reasonable opportunity for review and comment by the  
21 State, agrees that the delay is attributable to a Force Majeure  
22 event, EPA will notify the Settling Defendants in writing of the  
23 length of the extension, if any, for performance of the  
24 obligations affected by the Force Majeure event.

1           66. If the Settling Defendants elect to invoke the  
2 dispute resolution procedures set forth in Section XX (Dispute  
3 Resolution), the Settling Defendants shall do so no later than  
4 fifteen (15) days after receipt of EPA's notice. In any such  
5 proceeding, the Settling Defendants shall have the burden of  
6 demonstrating by a preponderance of the evidence that the delay  
7 or anticipated delay has been or will be caused by a Force  
8 Majeure event, that the duration of the delay or the extension  
9 sought was or will be warranted under the circumstances, that  
10 best efforts were exercised to avoid and mitigate the effects of  
11 the delay, and that Settling Defendants complied with the  
12 requirements of Paragraphs 63 and 64, above. If the Settling  
13 Defendants carry this burden, the delay at issue shall be deemed  
14 not to be a violation by Settling Defendants of the affected  
15 obligation of this Consent Decree identified to EPA and the  
16 Court.

17  
18                           XX. DISPUTE RESOLUTION

19           67. Unless otherwise expressly provided for in this  
20 Consent Decree, the dispute resolution procedures of this Section  
21 shall be the exclusive mechanism to resolve disputes arising  
22 under or with respect to this Consent Decree. However, the  
23 procedures set forth in this Section shall not apply to actions  
24 by the United States or the State to enforce obligations of the  
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1 Settling Defendants that have not been disputed in accordance  
2 with this Section.

3         68. Any dispute which arises under or with respect to  
4 this Consent Decree shall in the first instance be the subject of  
5 informal negotiations between the parties to the dispute. The  
6 period for informal negotiations shall be twenty (20) days from  
7 the time the dispute arises, unless it is modified by written  
8 agreement of the parties to the dispute. The dispute shall be  
9 considered to have arisen when one party sends the other parties  
10 a written Notice of Dispute.

11         69. a. In the event that the parties to the dispute  
12 cannot resolve a dispute by informal negotiations under the  
13 preceding paragraph, then the position advanced by EPA shall be  
14 considered binding unless, within ten (10) days after the  
15 conclusion of the informal negotiation period, the Settling  
16 Defendant who is a party to the dispute invokes the formal  
17 dispute resolution procedures of this Section by serving on the  
18 United States, the State and the other Settling Defendant a  
19 written Statement of Position on the matter in dispute,  
20 including, but not limited to, any factual data, analysis or  
21 opinion supporting that position and any supporting documentation  
22 relied upon by the Settling Defendant. The Statement of Position  
23 shall specify the Settling Defendant's position as to whether  
24 formal dispute resolution should proceed under Paragraph 70 or  
25 71.

1                   b. Within fourteen (14) days after receipt of  
2 Settling Defendant's Statement of Position, EPA will serve on the  
3 State and the Settling Defendant who is a party to the dispute,  
4 its Statement of Position, including, but not limited to, any  
5 factual data, analysis, or opinion supporting that position and  
6 all supporting documentation relied upon by EPA. EPA's Statement  
7 of Position shall include a statement as to whether formal  
8 dispute resolution should proceed under Paragraph 70 or 71.

9                   c. If there is disagreement between EPA and the  
10 Settling Defendant who is a party to the dispute, as to whether  
11 dispute resolution should proceed under Paragraph 70 or 71, the  
12 parties to the dispute shall follow the procedures set forth in  
13 the paragraph determined by EPA to be applicable. However, if  
14 the Settling Defendant ultimately appeals to the court to resolve  
15 the dispute, the Court shall determine which paragraph is  
16 applicable in accordance with the standards of applicability set  
17 forth in Paragraphs 70 and 71.

18               70. Formal dispute resolution for disputes pertaining to  
19 the selection or adequacy of any response action and all other  
20 disputes that are accorded review on the administrative record  
21 under applicable principles of administrative law shall be  
22 conducted pursuant to the procedures set forth in this paragraph.  
23 For purposes of this paragraph, the adequacy of any response  
24 action includes, without limitation: (1) the adequacy or  
25 appropriateness of plans, procedures to implement plans, or any  
26



1 other items requiring approval by EPA under this Consent Decree;  
2 and (2) the adequacy of the performance of response actions taken  
3 pursuant to this Consent Decree. Nothing in this Consent Decree  
4 shall be construed to allow any dispute by Settling Defendants  
5 regarding the validity of the RODs' provisions.

6           a. An administrative record of the dispute shall be  
7 maintained by EPA and shall contain all statements of position,  
8 including supporting documentation, submitted pursuant to this  
9 paragraph. Where appropriate, EPA may allow submission of  
10 supplemental statements of position by the parties to the  
11 dispute.

12           b. The Director of the Hazardous Waste Division,  
13 EPA Region 10, will issue a final administrative decision  
14 resolving the dispute based on the administrative record  
15 described in Paragraph 70(a). This decision shall be binding  
16 upon the Settling Defendant who is a party to the dispute,  
17 subject only to the right to seek judicial review pursuant to  
18 Paragraph 70(c) and (d).

19           c. Any administrative decision made by EPA pursuant  
20 to Paragraph 70(b) shall be reviewable by this Court, provided  
21 that a notice of judicial appeal is filed with the Court by the  
22 Settling Defendant who is the party to the dispute and served on  
23 the United States, the State, and the other Settling Defendant  
24 within ten (10) days of receipt of EPA's decision. The notice of  
25 judicial appeal shall include a description of the matter in  
26

1 dispute, the efforts made by the parties to resolve it, the  
2 relief requested, and the schedule, if any, within which the  
3 dispute must be resolved to ensure orderly implementation of this  
4 Consent Decree. The United States may file a response to  
5 Settling Defendant's notice of judicial appeal.

6 d. In proceedings on any dispute governed by this  
7 paragraph, Settling Defendants shall have the burden of  
8 demonstrating that the decision of the Hazardous Waste Division  
9 Director is arbitrary and capricious or otherwise not in  
10 accordance with law. Judicial review of EPA's decision shall be  
11 on the administrative record compiled pursuant to Paragraph  
12 70(a).

13 71. Formal dispute resolution for disputes that neither  
14 pertain to the selection or adequacy of any response action nor  
15 are otherwise accorded review on the administrative record under  
16 applicable principles of administrative law shall be governed by  
17 this paragraph.

18 a. Following receipt of Settling Defendant's  
19 Statement of Position submitted pursuant to Paragraph 69, the  
20 Director of the Hazardous Waste Division, EPA Region 10, will  
21 issue a final decision resolving the dispute. The Hazardous  
22 Waste Division Director's decision shall be binding on the  
23 Settling Defendant unless, within ten (10) days of receipt of the  
24 decision, the Settling Defendant who is a party to the dispute  
25 files with the Court and serves on the United States, the State  
26

1 and the other Settling Defendant a notice of judicial appeal  
2 setting forth the matter in dispute, the efforts made by the  
3 parties to resolve it, the relief requested, and the schedule, if  
4 any, within which the dispute must be resolved to ensure orderly  
5 implementation of the Consent Decree. The United States may file  
6 a response to Settling Defendant's notice of judicial appeal.

7           b. Notwithstanding Paragraph R of Section I  
8 (Background) of this Consent Decree, judicial review of any  
9 dispute governed by this paragraph shall be governed by  
10 applicable provisions of law.

11           72. The invocation of formal dispute resolution  
12 procedures under this Section shall not extend, postpone, or  
13 affect in any way any obligation of the Settling Defendants under  
14 this Consent Decree not directly in dispute, unless EPA or the  
15 Court agrees otherwise. Stipulated penalties with respect to the  
16 disputed matter shall continue to accrue but payment shall be  
17 stayed pending resolution of the dispute as provided in Paragraph  
18 82. Notwithstanding the stay of payment, stipulated penalties  
19 shall accrue from the first day of noncompliance with any  
20 applicable provision of this Consent Decree. In the event that  
21 the Settling Defendant does not prevail on the disputed issue,  
22 stipulated penalties shall be assessed and paid as provided in  
23 Section XXI (Stipulated Penalties).

XXI. STIPULATED PENALTIES

73. The Settling Defendants shall be liable for stipulated penalties in the amounts set forth in Paragraphs 74 and 75 to the United States for failure to comply with the requirements of this Consent Decree specified below which pertain to them, unless excused under Section XIX (Force Majeure).

"Compliance" by the Settling Defendants shall include completion of the activities under this Consent Decree or any work plan or other plan approved under this Consent Decree identified below in accordance with all applicable requirements of law, this Consent Decree, the SOWs, and any plans or other documents approved by EPA pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree.

74. a. The following stipulated penalties shall be payable per violation per day to the United States for any noncompliance identified in Subparagraph b:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st - 14th day
\$5,000	15th - 30th day
\$10,000	31st day and beyond

b. Activities/Deliverables

-Submission of Work Plan(s) in compliance with the SOWs.

-Initiation of remediation construction activities in compliance with the SOWs and approved Work Plans.

-Completion of the Remedial Action in compliance with the SOWs and the approved Work Plans.

75. For all other requirements of this Consent Decree, stipulated penalties shall accrue in the following amounts:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$500.00	1st - 14th day
\$1,000.00	15th - 30th day
\$5,0000.00	31st day and beyond

76. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 92 of Section XXII (Covenants Not to Sue by Plaintiffs), Settling Defendants shall be liable for an additional stipulated penalty in the amount of three (3) times the cost incurred by EPA to perform the Work or \$100,000.00, whichever is less.

77. Except as provided in Paragraph 44, all penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

78. In its sole, unreviewable discretion, EPA may waive all or a portion of the stipulated penalties due under this Section.

79. Following EPA's determination that Settling Defendants have failed to comply with a requirement of this Consent Decree, EPA may give Settling Defendants written

1 notification of the same and describe the noncompliance. EPA may  
2 send the Settling Defendants a written demand for the payment of  
3 the penalties. However, penalties shall accrue as provided in  
4 Paragraph 77 regardless of whether EPA has notified the Settling  
5 Defendants of a violation.

6 80. All penalties owed to the United States under this  
7 section shall be due and payable within thirty (30) days of the  
8 Settling Defendants' receipt of a demand for payment of  
9 penalties, unless Settling Defendants invoke the Dispute  
10 Resolution procedures under Section XX (Dispute Resolution). All  
11 payments under this Section shall be paid by certified check made  
12 payable to "EPA Hazardous Substances Superfund," shall be mailed  
13 to US Environmental Protection Agency, EPA Hazardous Substance  
14 Superfund, P.O. Box 360903M, Pittsburgh, PA 15251 and shall  
15 reference the U.S.A.O file number \_\_\_\_\_, the EPA  
16 Region and Site/Spill ID #1020, and DOJ case number 90-11-3-128I.  
17 Copies of check(s) paid pursuant to this Section, and any  
18 accompanying transmittal letter(s), shall be sent to the United  
19 States as provided in Section XXVII (Notices and Submissions).

20 81. The payment of penalties shall not alter in any way  
21 Settling Defendants' obligation to complete the performance of  
22 the Work required under this Consent Decree.

23 82. Penalties shall continue to accrue as provided in  
24 Paragraph 77 during any dispute resolution period, but need not  
25 be paid until the following:

1           a.    If the dispute is resolved by agreement or by a  
2 decision of EPA that is not appealed to this Court, accrued  
3 penalties determined to be owing shall be paid to EPA within  
4 fifteen (15) days of the agreement or the receipt of EPA's  
5 decision or order;

6           b.    If the dispute is appealed to this Court and  
7 the United States prevails in whole or in part, Settling  
8 Defendants shall pay all accrued penalties determined by the  
9 Court to be owed to EPA within sixty (60) days of receipt of the  
10 Court's decision or order, except as provided in Subparagraph c  
11 below;

12           c.    If the District Court's decision is appealed by  
13 any Party, Settling Defendants shall pay all accrued penalties  
14 determined by the District Court to be owing to the United States  
15 into an interest-bearing escrow account within sixty (60) days of  
16 receipt of the Court's decision or order. Penalties shall be  
17 paid into this account as they continue to accrue, at least every  
18 sixty (60) days. Within fifteen (15) days of receipt of the  
19 final appellate court decision, the escrow agent shall pay the  
20 balance of the account to EPA or to Settling Defendants to the  
21 extent that they prevail.

22           83. a.   If Settling Defendants fail to pay stipulated  
23 penalties when due, the United States may institute proceedings  
24 to collect the penalties, as well as interest. Settling  
25 Defendants shall pay interest on the unpaid balance, which shall

1 begin to accrue on the date of demand made pursuant to Paragraph  
2 80 at the rate established pursuant to Section 107(a) of CERCLA,  
3 42 U.S.C. § 9607.

4       b. Nothing in this Consent Decree shall be  
5 construed as prohibiting, altering, or in any way limiting the  
6 ability of the United States or the State to seek any other  
7 remedies or sanctions available by virtue of Settling Defendants'  
8 violation of this Decree or of the statutes and regulations upon  
9 which it is based, including, but not limited to, penalties  
10 pursuant to Section 122(1) of CERCLA, 42 U.S.C. § 9622(1).

11       84. No payments made under this Section shall be tax  
12 deductible for Federal or State tax purposes.

13  
14       XXII. COVENANTS NOT TO SUE BY PLAINTIFFS

15       85. a. In consideration of the actions that will be  
16 performed and payments that will be made by the Stauffer Entities  
17 under the terms of the Consent Decree, and except as specifically  
18 provided in Paragraphs 86, 87, and 91 of this Section, the United  
19 States covenants not to sue or to take administrative action  
20 against the Stauffer Entities pursuant to Sections 106 and 107(a)  
21 of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), and Section 7003 of  
22 RCRA, 42 U.S.C. § 6973, relating to the Site. In consideration  
23 of the actions that will be performed and payments that will be  
24 made by the Stauffer Entities under the terms of the Consent  
25 Decree, and except as specifically provided in Paragraphs 88, 89,



1 and 91 of this Section, the State covenants not to sue or to take  
2 action against the Stauffer Entities pursuant to Section 107(a)  
3 of CERCLA, 42 U.S.C. § 9607(a), the Hazardous Waste Management  
4 Act, Idaho Code Section § 39-4401, et. seq., and the  
5 Environmental Protection and Health Act, Idaho Code Section  
6 § 39-101, et. seq., relating to the Site. With respect to all  
7 past costs at the Site, and past and future liability at the Site  
8 in areas outside the NIPC Area, the covenant not to sue shall  
9 take effect upon payment of the amounts set forth in Paragraph  
10 8(d) of the Consent Decree. With respect to the ICP, the  
11 covenant not to sue shall take effect upon payment of the amounts  
12 set forth in Paragraph 8(c). With respect to the Stauffer  
13 Entities' future liability for the Phosphoric Acid/Fertilizer  
14 Plant subarea, the covenant not to sue shall be effective upon  
15 payment of the amount in Paragraph 8(e). With respect to the  
16 Stauffer Entities future liability for the A-4 Gypsum subarea,  
17 the covenant not to sue shall take effect for the Remedial Action  
18 upon Certification of Completion by EPA pursuant to Paragraph  
19 52(b) of Section XV (Certification of Completion) of the Remedial  
20 Action. These covenants not to sue are conditioned upon the  
21 complete and satisfactory performance by the Stauffer Entities of  
22 their obligations under this Consent Decree. The covenants not  
23 to sue extend only to the Stauffer Entities and, with respect to  
24 liability derived from the Stauffer Entities, to its successors  
25 and assigns, and do not extend to any other person.

b. In consideration of the actions that will be performed and payments that will be made by Union Pacific under the terms of the Consent Decree, and except as specifically provided in Paragraphs 86, 87, and 91 of this Section, the United States covenants not to sue or to take administrative action against Union Pacific pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), and Section 7003 of RCRA, 42 U.S.C. § 6973, relating to the Site. In consideration of the actions that will be performed and payments that will be made by Union Pacific under the terms of the Consent Decree, and except as specifically provided in Paragraphs 88, 89, and 91 of this Section, the State covenants not to sue or to take action against Union Pacific pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), the Hazardous Waste Management Act, Idaho Code Section § 39-4401, et. seq., and the Environmental Protection and Health Act, Idaho Code Section § 39-101, et. seq., relating to the Site. With respect to all past costs at the Site, and past and future liability at the Site in areas outside the Union Pacific Area, the covenant not to sue shall take effect upon payment of the amounts set forth in Paragraph 9(d) of the Consent Decree. With respect to the ICP, the covenant not to sue shall take effect upon payment of the amounts set forth in Paragraph 9(c). With respect to Union Pacific's future liability for the Union Pacific Area, the covenant not to sue shall take effect for the Remedial Action upon Certification of Completion by EPA pursuant

1 to Paragraph 52(b) of Section XV (Certification of Completion) of  
2 the Remedial Action. These covenants not to sue are conditioned  
3 upon the complete and satisfactory performance by Union Pacific  
4 of its obligations under this Consent Decree. These covenants  
5 not to sue extend only to Union Pacific and, with respect to  
6 liability derived from Union Pacific, to its successors and  
7 assigns, and do not extend to any other person.

8       86. United States' Pre-Certification Reservations

9       Notwithstanding any other provision of this Consent  
10 Decree, the United States reserves, and this Consent Decree is  
11 without prejudice to any right to institute proceedings in this  
12 action or in a new action, or issue an administrative order  
13 seeking to compel the Settling Defendants (1) to perform further  
14 response actions relating to their Respective Area; or (2) to  
15 reimburse the United States for additional costs of response  
16 attributable to their Respective Area, if, prior to Certification  
17 of Completion of the Remedial Action or prior to issuance of a  
18 notice by EPA that the Phosphoric Acid/Fertilizer Plant subarea  
19 remediation is completed,

20       (i) conditions within the Respective Area, previously  
21       unknown to EPA, are discovered, or

22       (ii) information, previously unknown to EPA, is received  
23       in whole or in part,

24 and these previously unknown conditions or information together  
25 with any other relevant information indicate that the Remedial  
26

1 Action or the Phosphoric Acid/Fertilizer Plant subarea  
2 remediation is not protective of human health and the  
3 environment.

4 87. United States Post-Certification Reservations

5 Notwithstanding any other provision of this Consent  
6 Decree, the United States reserves, and this Consent Decree is  
7 without prejudice to any right to institute proceedings in this  
8 action or in a new action, or issue an administrative order  
9 seeking to compel the Settling Defendants (1) to perform further  
10 response actions relating to their Respective Area; or (2) to  
11 reimburse the United States for additional costs of response  
12 attributable to their Respective Area, if, subsequent to  
13 Certification of Completion of a Remedial Action or subsequent to  
14 issuance of a notice by EPA that the Phosphoric Acid/Fertilizer  
15 Plant subarea remediation is completed,

16 (i) conditions within the Respective Area, previously  
17 unknown to EPA, are discovered, or

18 (ii) information, previously unknown to EPA, is received  
19 in whole or in part,

20 and these previously unknown conditions or information together  
21 with any other relevant information indicate that the Remedial  
22 Action or the Phosphoric Acid/Fertilizer Plant subarea  
23 remediation is not protective of human health and the  
24 environment.

1           88.   State of Idaho's Pre-Certification Reservations

2           Notwithstanding any other provision of this Consent  
3 Decree, the State reserves, and this Consent Decree is without  
4 prejudice to any right it may have, jointly with, or separately  
5 from the United States, to institute proceedings in this action  
6 or in a new action pursuant to the State's authorities under  
7 Section 107 of CERCLA or applicable State law, including the  
8 Hazardous Waste Management Act, Idaho Code Section § 39-4401,  
9 et seq., and, the Environmental Protection and Health Act, Idaho  
10 Code Section § 39-101, et seq., seeking (1) to compel Settling  
11 Defendants to perform further response actions relating to their  
12 Respective Area, or (2) to compel Settling Defendants to  
13 reimburse the State for additional costs of response attributable  
14 to their Respective Area, if, prior to Certification of  
15 Completion of the Remedial Action or prior to issuance of a  
16 notice by EPA that the Phosphoric Acid/Fertilizer Plant subarea  
17 remediation is completed,

18           (i) conditions within the Respective Area, previously  
19           unknown to the State, are discovered, or

20           (ii) information, previously unknown to the State, is  
21           received in whole or in part,

22 and these previously unknown conditions or information together  
23 with any other relevant information indicate that the Remedial  
24 Action or the Phosphoric Acid/Fertilizer Plant subarea

1 remediation is not protective of human health and the  
2 environment.

3       89. State of Idaho's Post-Certification Reservations

4       Notwithstanding any other provision of this Consent  
5 Decree, the State reserves, and this Consent Decree is without  
6 prejudice to any right it may have, jointly with, or separately  
7 from the United States, to institute proceedings in this action  
8 or in a new action pursuant to the State's authorities under  
9 Section 107 of CERCLA or applicable State law, including the  
10 Hazardous Waste Management Act, Idaho Code Section § 39-4401,  
11 et seq., and, the Environmental Protection and Health Act, Idaho  
12 Code Section § 39-101 et seq., seeking (1) to compel Settling  
13 Defendants to perform further response actions relating to their  
14 Respective Area, or (2) to compel Settling Defendants to  
15 reimburse the State for additional costs of response attributable  
16 to their Respective Area, if subsequent to Certification of  
17 Completion of a Remedial Action or subsequent to issuance of a  
18 notice by EPA that the Phosphoric Acid/Fertilizer Plant subarea  
19 remediation is completed, :

20       (i) conditions within the Respective Area, previously  
21       unknown to the State, are discovered, or

22       (ii) information, previously unknown to the State, is  
23       received in whole or in part,

24 and these previously unknown conditions or information together  
25 with any other relevant information indicate that the Remedial  
26

1 Action or the Phosphoric Acid/Fertilizer Plant subarea  
2 remediation is not protective of human health and the  
3 environment.

4 90. For purposes of Paragraphs 86 and 88, the  
5 information and the conditions known to EPA and the State shall  
6 include only that information and those conditions set forth in  
7 the RODs for the Site and the Administrative Record supporting  
8 the RODs. For purposes of Paragraph 87 and 89, the information  
9 and the conditions known to EPA and the State shall include only  
10 that information and those conditions set forth in the RODs, the  
11 Administrative Record supporting the RODs, and any information  
12 received by EPA pursuant to the requirements of this Consent  
13 Decree prior to Certification of Completion of the Remedial  
14 Action, or, as to the PAFP subarea, prior to issuance of notice  
15 by EPA that the PAFP Remedial Action is completed.

16 91. General reservations of rights. Notwithstanding  
17 any other provision of this Consent Decree, the covenants not to  
18 sue set forth above do not pertain to any matters other than  
19 those expressly specified in Paragraph 85. The United States and  
20 the State reserve, and this Consent Decree is without prejudice  
21 to, all rights against Settling Defendants with respect to all  
22 other matters, including but not limited to, the following:

- 23 (1) claims based on a failure by Settling Defendants to  
24 meet a requirement under this Consent Decree;  
25 (2) liability arising from the past, present, or future  
26 disposal, release, or threat of release of Waste  
Materials outside of the Site;

- (3) liability for damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release;
- (4) liability for response costs that have been or may be incurred by any natural resource trustees;
- (5) criminal liability;
- (6) liability for violations of federal or state law which occur during or after implementation of the Remedial Action;
- (7) liability for response costs incurred and/or response actions taken outside of the Site;
- (8) liability for releases or threatened releases of hazardous substances resulting from activities of the Settling Defendants in or affecting the Site after entry of the Consent Decree.

92. In the event EPA, after consultation with the State, determines that Settling Defendants have failed to implement any provisions of their Work in an adequate or timely manner, EPA or, upon request by EPA, the State, may perform any and all portions of the Work as EPA determines necessary. Settling Defendants may invoke the procedures set forth in Section XX (Dispute Resolution) to dispute EPA's determination that the Settling Defendants failed to implement a provision of the Work in an adequate or timely manner as arbitrary and capricious or otherwise not in accordance with law. Such dispute shall be resolved on the administrative record. Costs incurred by the United States or the State in performing the Work pursuant to this paragraph shall be considered Future Response Costs that



1 Settling Defendants shall pay pursuant to Section XVII  
2 (Reimbursement of Response Costs).

3 93. Notwithstanding any other provisions of this Consent  
4 Decree, the United States and the State retain all authority and  
5 reserve all rights to take any and all response actions  
6 authorized by law.

7  
8 XXIII. COVENANTS BY SETTLING DEFENDANTS

9 94. Except as limited in this paragraph, Settling  
10 Defendants hereby covenant not to sue and agree not to assert any  
11 claims or causes of action against the United States, the State  
12 or any Idaho county, city, or local governmental entity with  
13 respect to the Site or this Consent Decree, including, but not  
14 limited to, any direct or indirect claim for reimbursement from  
15 the Hazardous Substance Superfund (established pursuant to the  
16 Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections  
17 106(b)(2), 111, 112, 113, 42 U.S.C. §§ 9606(b)(2), 9611, 9612,  
18 9613 or any other provision of law, any claim against the United  
19 States, including any department, agency or instrumentality of  
20 the United States under CERCLA Section 107 or 113 related to the  
21 Site, any claim against the State or any Idaho county, city or  
22 local governmental entity under CERCLA Section 107 or 113 related  
23 to the Site or any claims arising out of response activities at  
24 the Site. However, the Settling Defendants reserve, and this  
25 Consent Decree is without prejudice to, actions against the

1 United States, the State or any Idaho county, city or local  
2 government entity based on negligent actions taken directly by  
3 such entities (not including oversight of or approval of the  
4 Settling Defendants' plans or activities) that are brought  
5 pursuant to any statute other than CERCLA and for which the  
6 waiver of sovereign immunity is found in a statute other than  
7 CERCLA to the extent such claim exists or may exist in the  
8 future. In addition, the Settling Defendants reserve, and this  
9 Consent Decree is without prejudice to, contribution actions  
10 against the United States or the State or any department, agency  
11 or instrumentality thereof, or any Idaho county, city or local  
12 government entity whether or not still in existence, under CERCLA  
13 Sections 107(a) and 113(f)(1), 42 U.S.C. §§ 9607(a) and  
14 9613(f)(1), for natural resource damages. The Settling  
15 Defendants also reserve and this Consent Decree is without  
16 prejudice to, actions or claims against the State or any Idaho  
17 county, city, or local government entity under Section 107(a) and  
18 113(f)(1) of CERCLA, 42 U.S.C. §§ 9607(a) and 9613(f)(1), for  
19 response costs incurred by Settling Defendants unrelated to  
20 implementation of the RODs as a result of activities at the Site  
21 taken by such government entity after the effective date of this  
22 Consent Decree (not including the activities of any such  
23 government entity pursuant to this Consent Decree). Nothing in  
24 this Consent Decree shall be deemed to constitute  
25  
26

1 preauthorization of a claim within the meaning of Section 111 of  
2 CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

3 95. Each Settling Defendant hereby expressly covenants  
4 not to sue any other Settling Defendant and its officers,  
5 directors, parents, successors, assigns, subsidiaries, employees  
6 or agents with respect to matters covered by this Consent Decree,  
7 except for claims premised on the failure of a Settling Defendant  
8 to perform its obligations under this Consent Decree or under any  
9 agreement among some or all Settling Defendants which addresses  
10 responsibilities pertaining to this Consent Decree.

11  
12 XXIV. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

13 96. Nothing in this Consent Decree shall be construed to  
14 create any rights in, or grant any cause of action to, any person  
15 not a party to this Consent Decree. The preceding sentence shall  
16 not be construed to waive or nullify any rights that any person  
17 not a signatory to this Consent Decree may have under applicable  
18 law. Each of the Parties expressly reserves any and all rights  
19 (including, but not limited to, any right to contribution),  
20 defenses, claims, demands, and causes of action which each party  
21 may have with respect to any matter, transaction, or occurrence  
22 relating in any way to the Site against any person not a party  
23 hereto. Nothing in this paragraph shall negate Settling  
24 Defendants' covenant not to sue any Idaho county, city, or local  
25 government entity as provided in Paragraph 94.

1 97. With regard to claims for contribution against  
2 Settling Defendants for matters addressed in this Consent Decree,  
3 the Parties hereto agree that the Settling Defendants are  
4 entitled to such protection from contribution actions or claims  
5 as is provided by CERCLA Section 113(f)(2), 42 U.S.C.  
6 § 9613(f)(2).

7 98. The Settling Defendants agree that with respect to  
8 any suit or claim for contribution brought by them for matters  
9 related to the Site or this Consent Decree they will notify the  
10 United States and the State, in writing, no later than sixty (60)  
11 days prior to the initiation of such suit or claim.

12 99. The Settling Defendants also agree that with respect  
13 to any suit or claim for contribution brought against them for  
14 matters related to the Site or this Consent Decree they will  
15 notify, in writing, the United States and the State within ten  
16 (10) days of service of the complaint on them. In addition,  
17 Settling Defendants shall notify the United States and the State  
18 within ten (10) days of service or receipt of any Motion for  
19 Summary Judgment and within ten (10) days of receipt of any order  
20 from a court setting a case for trial.

21 100. In any subsequent administrative or judicial  
22 proceeding initiated by the United States or the State for  
23 injunctive relief, recovery of response costs, or other  
24 appropriate relief relating to the Site, Settling Defendants  
25 shall not assert, and may not maintain, any defense or claim  
26

1 based upon the principles of waiver, res judicata, collateral  
2 estoppel, issue preclusion, claim-splitting, or other defenses  
3 based upon any contention that the claims raised by the United  
4 States or the State in the subsequent proceeding were or should  
5 have been brought in the instant case; provided, however, that  
6 nothing in this paragraph affects the enforceability of the  
7 covenants not to sue set forth in Section XXII (Covenants Not to  
8 Sue by Plaintiffs).

9  
10 XXV. ACCESS TO INFORMATION

11 101. Except as provided by Paragraph 102(b), Settling  
12 Defendants shall provide to EPA and the State, upon request,  
13 copies of all documents and information within their possession  
14 or control or that of their contractors or agents relating to the  
15 Work or to the implementation of this Consent Decree, including,  
16 but not limited to, sampling, analysis, chain of custody records,  
17 manifests, trucking logs, receipts, reports, sample traffic  
18 routing, correspondence, or other documents or information  
19 related to the Work. Settling Defendants shall also make  
20 available to EPA and the State, for purposes of investigation,  
21 information gathering, or testimony, relating to the Work or  
22 implementation of the Consent Decree their employees, agents, or  
23 representatives with knowledge of relevant facts concerning the  
24 performance of the Work.

1           102. a. Settling Defendants may assert business  
2 confidentiality claims covering part or all of the documents or  
3 information submitted to Plaintiffs under this Consent Decree to  
4 the extent permitted by and in accordance with Section 104(e) (7)  
5 of CERCLA, 42 U.S.C. § 9604(e) (7), and 40 C.F.R. § 2.203(b) .  
6 Documents or information determined to be confidential by EPA  
7 will be afforded the protection specified in 40 C.F.R. Part 2,  
8 Subpart B. If no claim of confidentiality accompanies documents  
9 or information when they are submitted to EPA and the State, or  
10 if EPA has notified Settling Defendants that the documents or  
11 information are not confidential under the standards of Section  
12 104(e) (7) of CERCLA, 42 U.S.C. § 9607(e) (7) the public may be  
13 given access to such documents or information without further  
14 notice to Settling Defendants.

15           b. The Settling Defendants may assert that certain  
16 documents, records and other information are privileged under the  
17 attorney-client privilege or any other privilege recognized by  
18 federal law. If the Settling Defendants assert such a privilege  
19 in lieu of providing documents, they shall provide the Plaintiffs  
20 with the following: (1) the title of the document, record, or  
21 information; (2) the date of the document, record, or  
22 information; (3) the name and title of the author of the  
23 document, record, or information; (4) the name and title of each  
24 addressee and recipient; (5) a description of the contents of the  
25 document, record, or information: and (6) the privilege asserted  
26

1 by Settling Defendants. The Plaintiffs retain the right to  
2 challenge any such claim of privilege. No documents, reports, or  
3 other information created or generated pursuant to the  
4 requirements of the Consent Decree shall be withheld on the  
5 grounds that they are privileged.

6 103. No claim of confidentiality shall be made with  
7 respect to any data, including, but not limited to, all sampling,  
8 analytical, monitoring, hydrogeologic, scientific, chemical, or  
9 engineering data, or any data or factual information evidencing  
10 conditions related to the Work or implementation of the Consent  
11 Decree contained in otherwise privileged documents.

12  
13 XXVI. RETENTION OF RECORDS

14 104. Unless otherwise approved by EPA, until ten (10)  
15 years after the Settling Defendants' receipt of EPA's  
16 notification pursuant to Paragraph 52(b) of Section XV  
17 (Certification of Completion of the Remedial Action), each  
18 Settling Defendant shall preserve and retain all records and  
19 documents now in its possession or control or which come into its  
20 possession or control that relate in any manner to the  
21 performance of the Work or that relate to the liability of any  
22 person for response actions conducted and to be conducted at the  
23 Site, regardless of any corporate retention policy to the  
24 contrary. Until ten (10) years after the Settling Defendants'  
25 receipt of EPA's notification pursuant to Paragraph 52(b) of

1 Section XV (Certification of Completion), Settling Defendants  
2 shall also instruct their contractors and agents to preserve all  
3 documents, records, and information of whatever kind, nature or  
4 description relating to the performance of the Work.

5           105. At the conclusion of this document retention period,  
6 Settling Defendants shall notify the United States and the State  
7 at least ninety (90) days prior to the destruction of any such  
8 records or documents, and, upon request by the United States or  
9 the State, Settling Defendants shall deliver any such records or  
10 documents to EPA or the State. The Settling Defendants may  
11 assert that certain documents, records and other information are  
12 privileged under the attorney-client privilege or any other  
13 privilege recognized by federal law. If the Settling Defendants  
14 assert such a privilege, they shall provide the Plaintiffs with  
15 the following: (1) the title of the document, record, or  
16 information; (2) the date of the document, record, or  
17 information; (3) the name and title of the author of the  
18 document, record, or information; (4) the name and title of each  
19 addressee and recipient; (5) a description of the subject of the  
20 document, record, or information: and (6) the privilege asserted  
21 by Settling Defendants. The Plaintiffs retain the right to  
22 challenge any such claim of privilege. No documents, reports, or  
23 other information created or generated pursuant to the  
24 requirements of the Consent Decree shall be withheld on the  
25 grounds that they are privileged.



1           106. Each Settling Defendant hereby certifies,  
2 individually, that it has not altered, mutilated, discarded,  
3 destroyed or otherwise disposed of any records, documents, or  
4 other information relating to its potential liability regarding  
5 the Site since notification of potential liability by the United  
6 States or the State or the filing of suit against it regarding  
7 the Site and that it has fully complied with any and all EPA  
8 requests for information pursuant to Section 104(e) and 122(e) of  
9 CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e).

10  
11                   XXVII. NOTICES AND SUBMISSIONS

12           107. Whenever, under the terms of this Consent Decree,  
13 written notice is required to be given or a report or other  
14 document is required to be sent by one party to another, it shall  
15 be directed to the individuals at the addresses specified below,  
16 unless those individuals or their successors give notice of a  
17 change to the other parties in writing. All notices and  
18 submissions shall be considered effective upon receipt, unless  
19 otherwise provided. Written notice as specified herein shall  
20 constitute complete satisfaction of any written notice  
21 requirement of the Consent Decree with respect to the United  
22 States, EPA, the State, and the Settling Defendants,  
23 respectively.

1 As to the United States:

2 Chief, Environmental Enforcement Section  
3 Environment and Natural Resources Division  
4 U.S. Department of Justice  
5 P.O. Box 7611  
6 Ben Franklin Station  
7 Washington, D.C. 20044  
8 Re: DJ #90-11-3-128I

9 and

10 Director, Waste Management Division  
11 United States Environmental Protection Agency  
12 Region 10  
13 1200 Sixth Avenue, HW-113  
14 Seattle, Washington 98101

15 As to EPA:

16 Director, Waste Management Division  
17 United States Environmental Protection Agency  
18 Region 10  
19 1200 Sixth Avenue, HW-113  
20 Seattle, Washington 98101

21 Regional Counsel  
22 EPA Office of Regional Counsel  
23 United States Environmental Protection Agency  
24 Region 10  
25 1200 Sixth Avenue, HW-113  
26 Seattle, Washington 98101

27 Nick Ceto  
28 EPA Project Coordinator  
United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue, HW-113  
Seattle, Washington 98101

29 As to the State:

30 Curt Fransen  
31 Office of Attorney General  
32 State of Idaho  
33 1410 N. Hilton  
34 2nd Floor  
35 Boise, Idaho 83706

36 BUNKER HILL STAUFFER/UNION PACIFIC RAILROAD  
37 CONSENT DECREE - Page 94

December 15, 1994

1 State Project Coordinator  
2 Idaho Department of Health & Welfare  
3 Division of Environmental Quality  
4 1410 North Hilton  
Boise, Idaho 83720-9000

5 As to the Settling Defendants:

6 Union Pacific  
7 Nancy A. Roberts  
8 Environmental Counsel  
1416 Dodge Street, Room 830  
Omaha, NE 68179-0830  
(402) 271-4752  
(402) 271-5610 (FAX)

10 Union Pacific  
11 Robert D. Markworth  
12 Manager, Environmental Site Remediation  
1416 Dodge Street, Room 930  
Omaha, NE 68179-0930  
13 (402) 271-4054  
(402) 271-4461 (FAX)

14 Rhone-Poulenc, Inc.  
15 George S. Goodridge  
16 Senior Environmental Attorney  
Rhone-Poulenc, Inc.  
CN 5266  
17 Princeton, New Jersey 08543-5266  
(908) 821-3533  
18 (908) 821-2787

19 Stauffer Management Company  
20 Brian A. Spiller  
21 President  
Stauffer Management Company  
1800 Concord Pike  
Wilmington, Delaware 19897  
22 (302) 886-5501  
(302) 886-2952 (FAX)

1 As to EPA Project Coordinator:

2 Nick Ceto  
3 EPA Project Coordinator  
4 United States Environmental Protection Agency  
5 Region 10  
6 1200 Sixth Avenue, HW-113  
7 Seattle, Washington 98101  
8 (206) 553-8659  
9 (206) 553-0124 (FAX)

7 As to State Project Coordinator:

8 State Project Coordinator  
9 Idaho Department of Health & Welfare  
10 Division of Environmental Quality  
11 1410 North Hilton  
12 Boise, Idaho 83720-9000  
13 (208) 334-5860  
14 (208) 334-0576 (FAX)

12 As to Settling Defendants' Project Coordinators

13 Union Pacific Project Coordinator  
14 Robert D. Markworth  
15 Manager, Environmental Site Remediation  
16 1416 Dodge Street, Room 930  
17 Omaha, NE 68179-0930  
18 (402) 271-4054  
19 (402) 271-4461 (FAX)

17 Rhone-Poulenc, Inc. and Stauffer Management Company  
18 Carol A. Dickerson  
19 Project Coordinator  
20 ZENECA Inc.  
21 Environmental Services & Operations  
22 1800 Concord Pike  
23 Wilmington, Delaware 19897  
24 Telephone: (302) 886-5123  
25 Facsimile: (302) 886-5933

22 XXVIII. EFFECTIVE DATE

23 108. The effective date of this Consent Decree shall be  
24 the date upon which this Consent Decree is entered by the Court,  
25 except as otherwise provided herein.  
26

1                   XXIX. RETENTION OF JURISDICTION

2           109. This Court retains jurisdiction over both the  
3 subject matter of this Consent Decree and the Settling Defendants  
4 for the duration of the performance of the terms and provisions  
5 of this Consent Decree for the purpose of enabling any of the  
6 Parties to apply to the Court at any time for such further order,  
7 direction, and relief as may be necessary or appropriate for the  
8 construction or modification of this Consent Decree, or to  
9 effectuate or enforce compliance with its terms, or to resolve  
10 disputes in accordance with Section XX (Dispute Resolution)  
11 hereof.

12                   XXX. ATTACHMENTS

13           110. The following attachments are attached to and  
14 incorporated into and made an enforceable part of this Consent  
15 Decree; provided, however, it is understood and agreed that the  
16 Stauffer Entities draft RDR must be finalized in accordance with  
17 the Consent Decree prior to becoming enforceable parts of this  
18 Decree:

19           "Attachment A" is the RODs.  
20           "Attachment B" is the map of the Bunker Hill Superfund Site.  
21           "Attachment C" is the map for the NIPC Area and subareas.  
22           "Attachment D" is the map for the Union Pacific Area.  
23           "Attachment E" is the Stauffer Entities SOW.  
24           "Attachment F" is the Union Pacific SOW.  
25           "Attachment G" is the Stauffer Entities draft RDR.  
26           "Attachment H" is the Union Pacific RAWP.  
27           "Attachment I" is the MOA between EPA and the State.

1 XXXI. COMMUNITY RELATIONS

2 111. Settling Defendants shall cooperate with EPA and the  
3 State in providing information regarding the Work to the public.  
4 As requested by EPA or the State, Settling Defendants shall  
5 participate in the preparation of such information for  
6 dissemination to the public and in public meetings which may be  
7 held or sponsored by EPA or the State to explain activities at or  
8 relating to the Site.

9  
10 XXXII. MODIFICATION

11 112. Schedules specified in the SOWs and other  
12 deliverables for completion of the Work may be modified by  
13 agreement of EPA, in consultation with the State, and the  
14 Settling Defendants. All such modifications shall be made in  
15 writing.

16 113. No material modifications shall be made to the SOWs  
17 without written notification to and written approval of the  
18 United States, the Settling Defendants and the Court. Prior to  
19 providing its approval to any modification, the United States  
20 will provide the State with a reasonable opportunity to review  
21 and comment on the proposed modification. Modifications to the  
22 SOWs that do not materially alter those documents may be made by  
23 written agreement between EPA, after providing the State with a  
24 reasonable opportunity to review and comment on the proposed  
25 modification, and the Settling Defendants.

1 114. Nothing in this Decree shall be deemed to alter the  
2 Court's power to enforce, supervise, or approve modifications to  
3 this Consent Decree.  
4

5 XXXIII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

6 115. This Consent Decree shall be lodged with the Court  
7 for a period of not less than thirty (30) days for public notice  
8 and comment in accordance with Section 122(d)(2) of CERCLA,  
9 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States  
10 and the State reserve the right to withdraw or withhold their  
11 consent if the comments regarding the Consent Decree disclose  
12 facts or considerations which indicate that the Consent Decree is  
13 inappropriate, improper, or inadequate. Settling Defendants  
14 consent to the entry of this Consent Decree in the form presented  
15 without further notice.

16 116. If for any reason the Court should decline to  
17 approve this Consent Decree in the form presented, this agreement  
18 is voidable at the sole discretion of any Party and the terms of  
19 the agreement may not be used as evidence in any litigation  
20 between the Parties.  
21

22 XXXIV. SIGNATORIES/SERVICE

23 117. Each undersigned representative of a Settling  
24 Defendant to this Consent Decree and the Assistant Attorney  
25 General for Environment and Natural Resources of the Department  
26

1 of Justice and the State signatory certifies that he or she is  
2 fully authorized to enter into the terms and conditions of this  
3 Consent Decree and to execute and legally bind such party to this  
4 document.

5 118. Each Settling Defendant hereby agrees not to oppose  
6 entry of this Consent Decree by this Court or to challenge any  
7 provision of this Consent Decree unless the United States has  
8 notified the Settling Defendants, in writing, that it no longer  
9 supports entry of the Consent Decree.

10 119. Each Settling Defendant shall identify, on the  
11 attached signature page, the name, address and telephone number  
12 of an agent who is authorized to accept service of process by  
13 mail on behalf of that party with respect to all matters arising  
14 under or relating to this Consent Decree. Settling Defendants  
15 hereby agree to accept service in that manner and to waive the  
16 formal service requirements set forth in Rule 4 of the Federal  
17 Rules of Civil Procedure and any applicable local rules of this  
18 Court, including, but not limited to, service of a summons.

19 SO ORDERED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 19\_\_.

20  
21 \_\_\_\_\_  
22 United States District Judge  
23  
24  
25  
26



1 THE UNDERSIGNED PARTIES enter into this Consent Decree in the  
2 matter of United States v. Stauffer Management Company; Rhone-  
3 Poulenc, Inc. and Union Pacific Railroad Company, relating to the  
4 Bunker Hill Superfund Site.

5  
6 FOR THE UNITED STATES OF AMERICA

7 Date: \_\_\_\_\_

8 Lois J. Schiffer  
9 Assistant Attorney General  
10 Environment and Natural Resources  
11 Division  
12 U.S. Department of Justice  
13 Washington, D.C. 20530

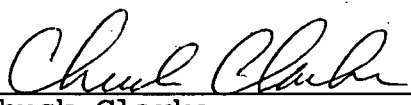
14 Peter Mounsey and Thomas Swegle  
15 Environmental Enforcement Section  
16 Environment and Natural Resources  
17 Division  
18 U.S. Department of Justice  
19 Washington, D.C. 20530


20 Assistant United States Attorney  
21 District of Idaho  
22 U.S. Department of Justice  
23  
24  
25  
26

1 THE UNDERSIGNED PARTIES enter into this Consent Decree in the  
2 matter of United States v. Stauffer Management Company; Rhone-  
3 Poulenc, Inc. and Union Pacific Railroad Company, relating to the  
4 Bunker Hill Superfund Site.

5  
6  
7  
8 FOR THE UNITED STATES  
9 ENVIRONMENTAL PROTECTION AGENCY

10  
11  
12 Steven A. Herman  
13 Assistant Administrator for  
14 Enforcement and Compliance Assurance  
15 U.S. Environmental Protection  
16 Agency  
17 401 M Street, S.W.  
18 Washington, D.C. 20460

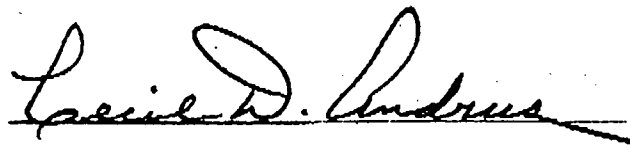
19  
20  
21   
22  
23 Chuck Clarke  
24 Regional Administrator, Region 10  
25 U.S. Environmental Protection Agency  
26 1200 Sixth Avenue  
27 Seattle, Washington 98101

28  
29  
30   
31  
32 Cynthia L. Mackey  
33 Assistant Regional Counsel  
34 U.S. Environmental Protection Agency  
35 Region 10  
36 1200 Sixth Avenue, SO-155  
37 Seattle, Washington 98101

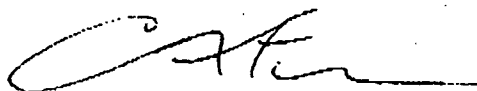
1 THE UNDERSIGNED PARTIES enter into this Consent Decree in the  
2 matter of United States v. Stauffer Management Company; Rhone-  
3 Poulenc, Inc. and Union Pacific Railroad Company, relating to the  
4 Bunker Hill Superfund Site.

5 FOR THE STATE OF IDAHO

6 Date: 12/28/94



7 Governor  
8 State of Idaho  
9 State House  
10 Boise, Idaho 83720



11 Curt A. Fransen  
12 Deputy Attorney General  
13 Office of Attorney General  
14 State of Idaho  
15 1410 N. Hilton  
16 2nd Floor  
17 Boise, Idaho 83706

1 THE UNDERSIGNED PARTY enters into this Consent Decree in the  
2 matter of United States v. Stauffer Management Company; Rhone-  
3 Poulenc, Inc. and Union Pacific Railroad Company relating to the  
4 Bunker Hill Superfund Site.

6 FOR UNION PACIFIC RAILROAD

8 Date: 12/27/94

James V. Dolan  
James V. Dolan  
Vice-President-Law  
1416 Dodge Street  
Omaha, NE 68179

12 Agent Authorized to Accept Service on Behalf of Above-signed  
13 Party:

14 James V. Dolan  
Vice-President-Law  
1416 Dodge Street  
15 Omaha, NE 68179

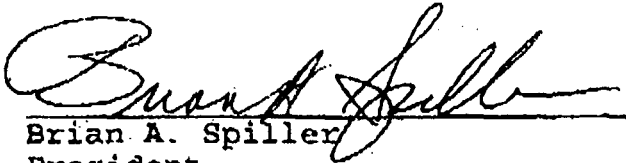
27 BUNKER HILL STAUFFER/UNION PACIFIC RAILROAD  
28 CONSENT DECREE - Page 104

December 15, 1994

1 THE UNDERSIGNED PARTIES enter into this Consent Decree in the  
2 matter of United States v. Stauffer Management Company; Rhone-  
3 Poulenc, Inc. and Union Pacific Railroad Company, relating to the  
4 Bunker Hill Superfund Site.

7 FOR STAUFFER MANAGEMENT COMPANY

8 Date: 12/23/94

9   
10 Brian A. Spiller  
11 President  
12 Stauffer Management Company  
13 1800 Concord Pike  
14 Wilmington, Delaware 19897

15 Agent Authorized to Accept Service on Behalf of Above-signed  
16 Party:

17 Brian A. Spiller  
18 President  
19 Stauffer Management Company  
20 1800 Concord Pike  
21 Wilmington, Delaware 19897

1 THE UNDERSIGNED PARTIES enter into this Consent Decree in the  
2 matter of United States v. Stauffer Management Company; Rhone-  
3 Poulenc, Inc and Union Pacific Railroad, relating to the Bunker  
4 Hill Superfund Site.

6 FOR RHONE-POULENC, INC

8 Date: \_\_\_\_\_

George S. Goodridge  
George S. Goodridge  
Senior Environmental Attorney  
Rhone-Poulenc, Inc.  
CN 5266  
Princeton, New Jersey 08543-5266

12 Agent Authorized to Accept Service on Behalf of Above-signed  
13 Party:

14 George S. Goodridge  
Senior Environmental Attorney  
Rhone-Poulenc, Inc.  
15 CN 5266  
Princeton, New Jersey 08543-5266

***Attachment A***  
***RODs***  
**(Not Enclosed)**

**Attachment B**

**Map of the Bunker Hill Superfund Site**



1 of 2

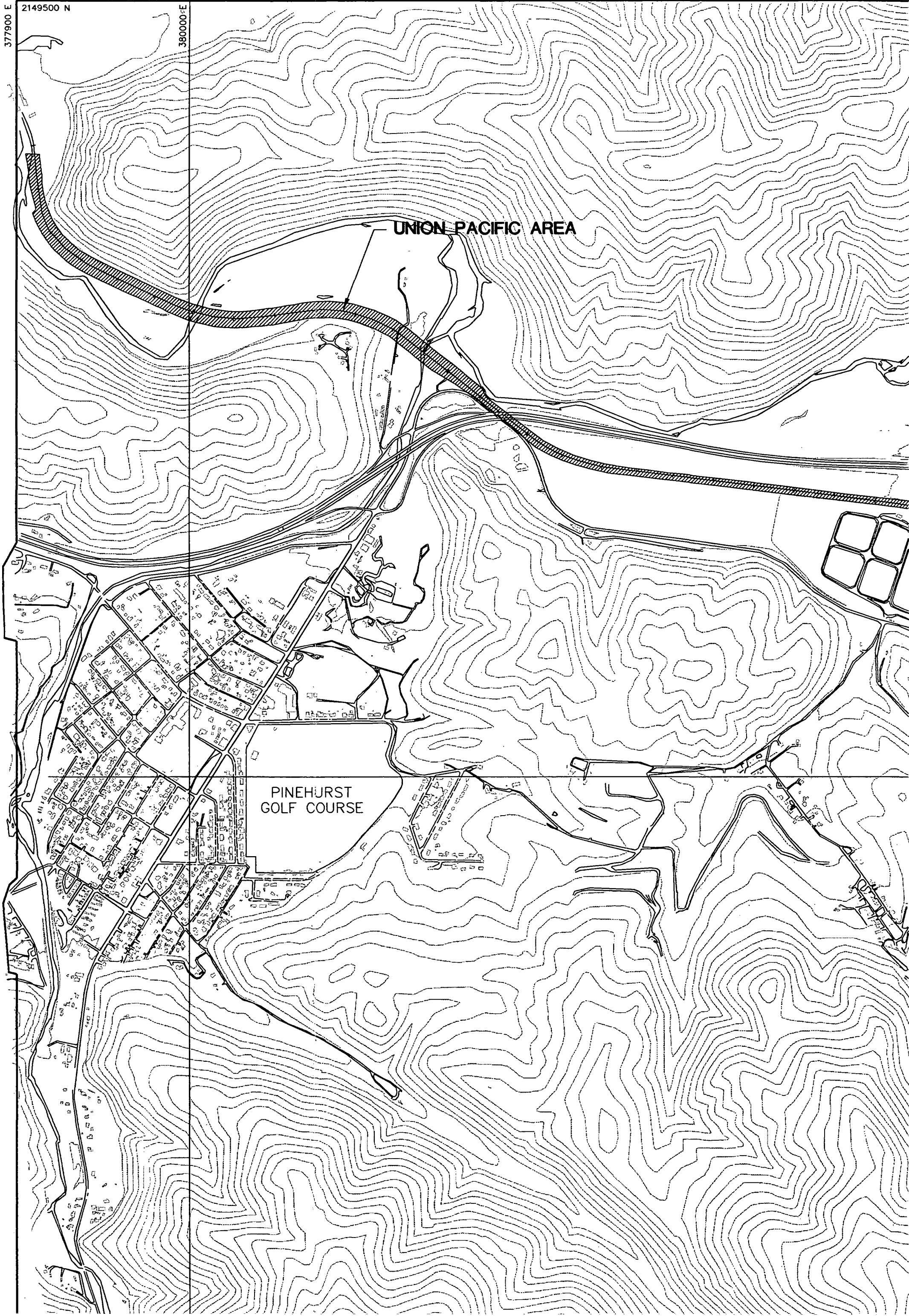
377900 E

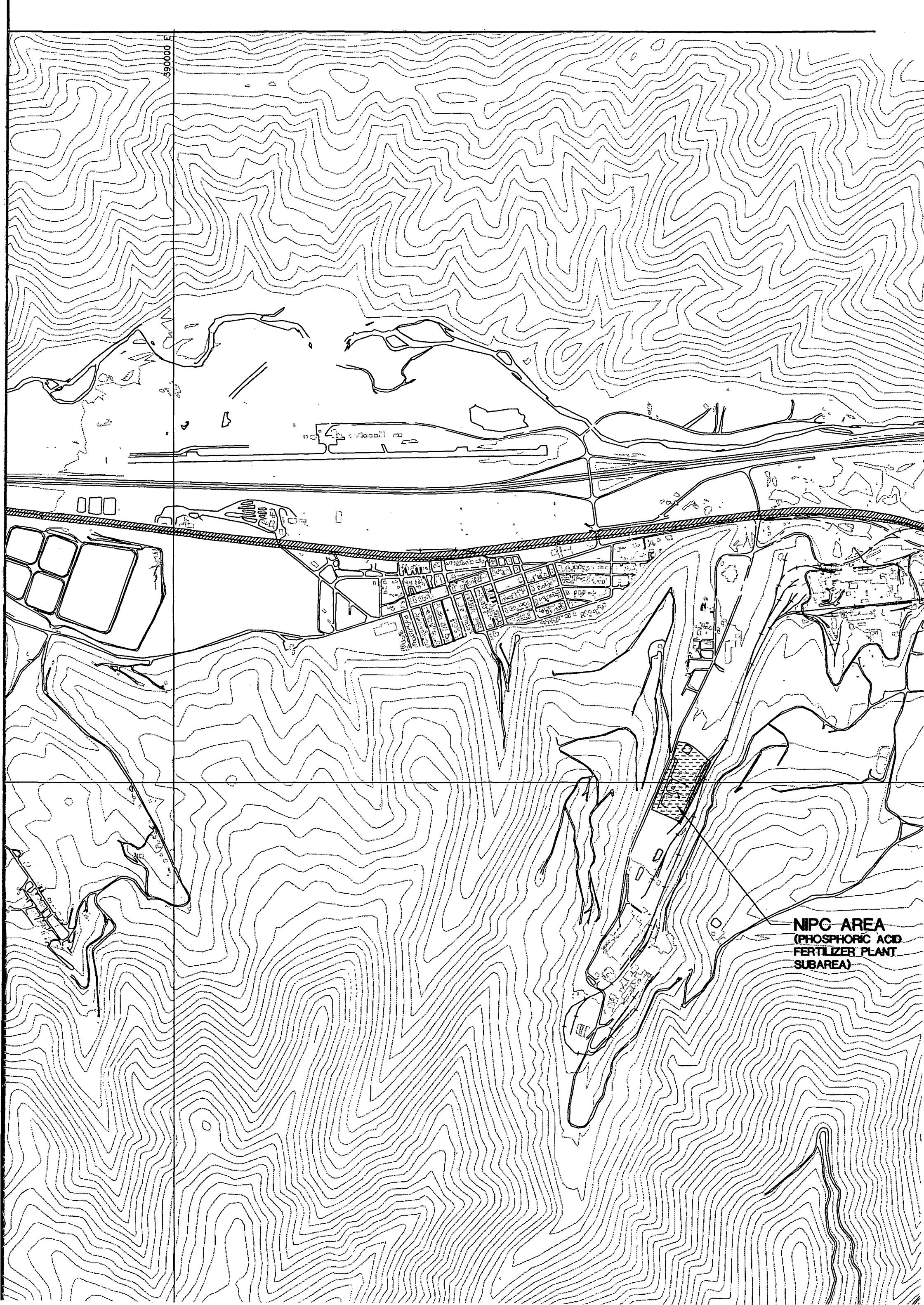
2149500 N

380000 E

UNION PACIFIC AREA

PINEHURST  
GOLF COURSE



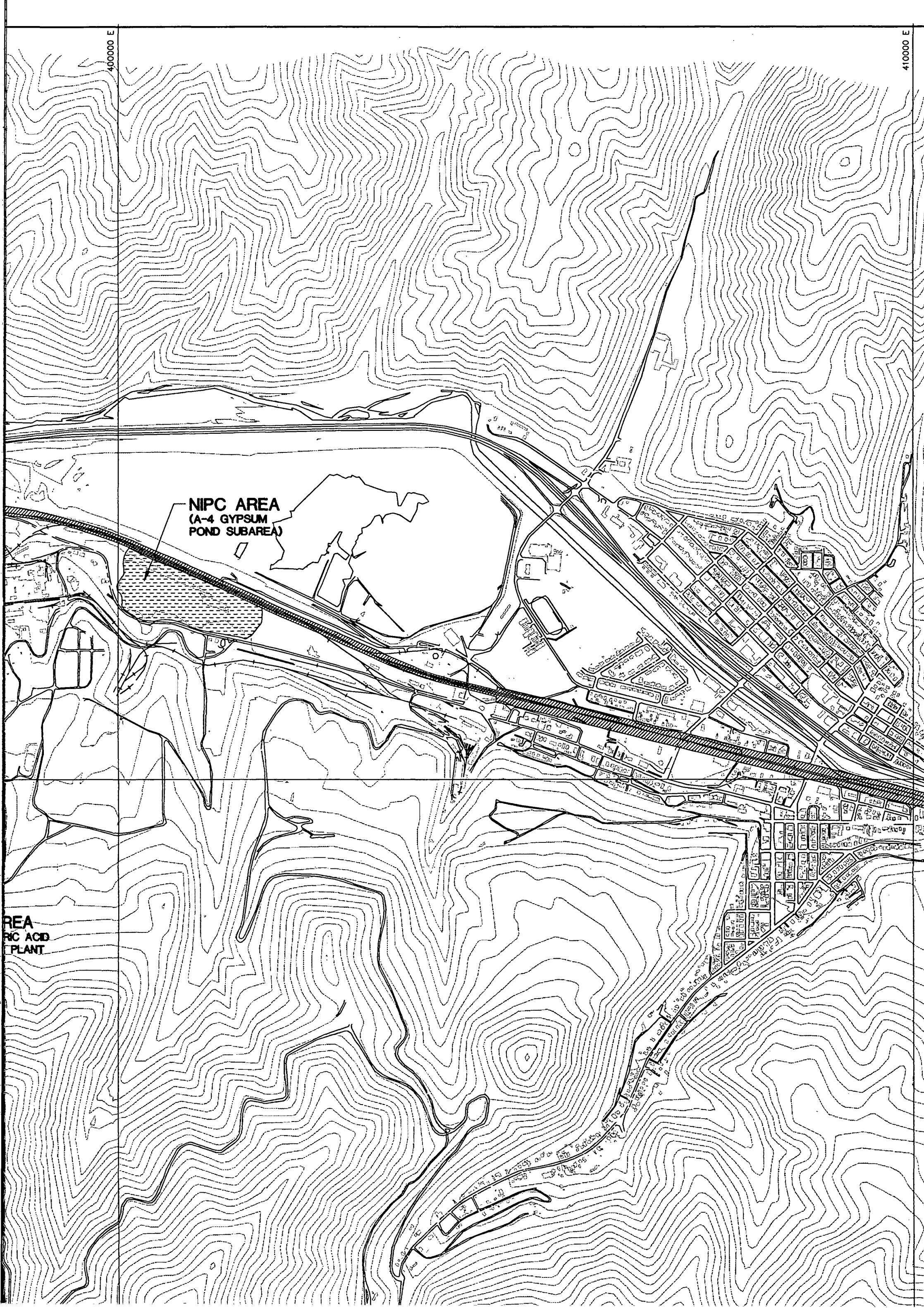


NPC AREA  
(PHOSPHORIC ACID  
FERTILIZER PLANT  
SUBAREA)



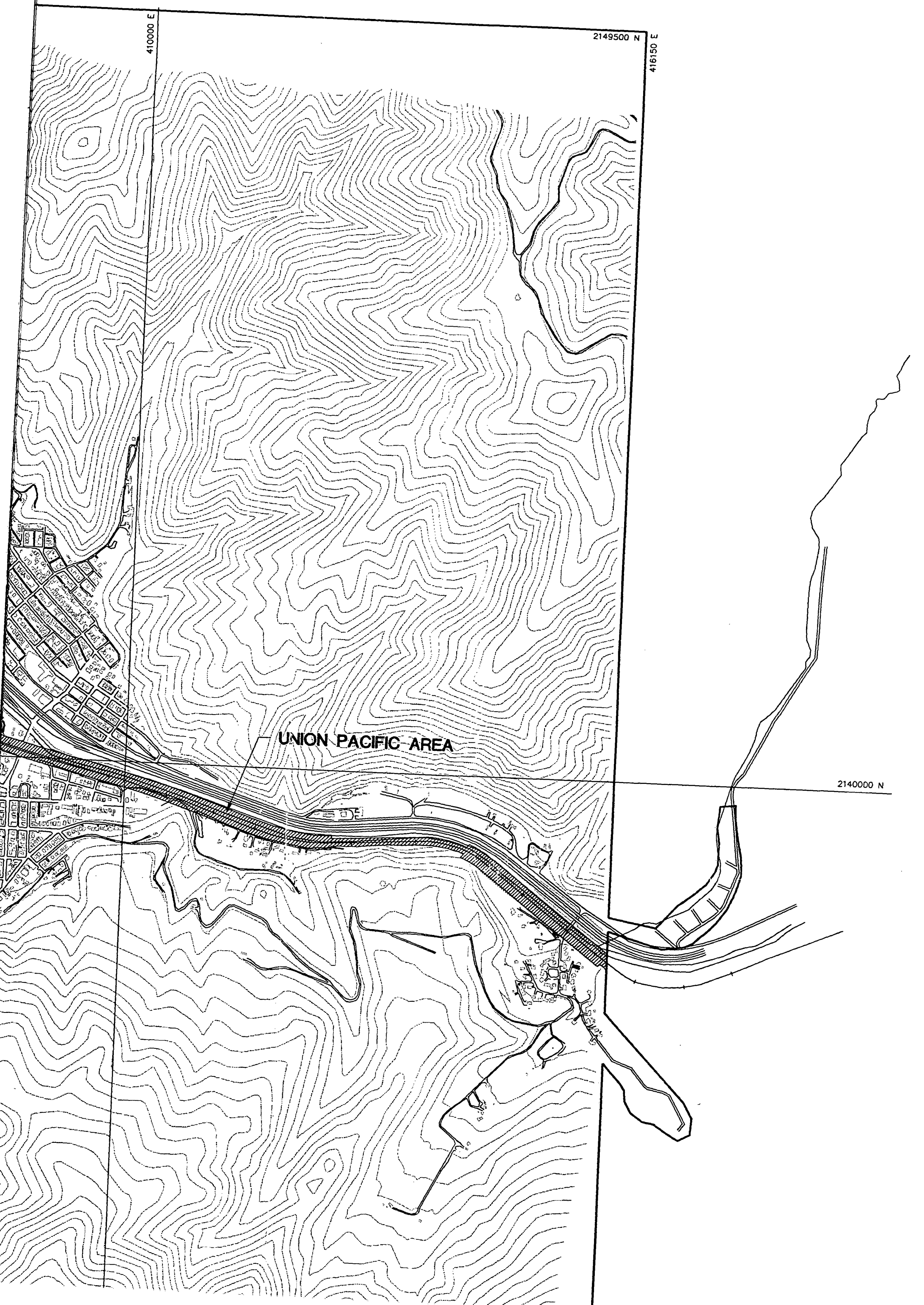
400000 E

410000 E



NIPC AREA  
(A-4 GYPSUM  
POND SUBAREA)

AREA  
PHOSPHORIC ACID  
PLANT



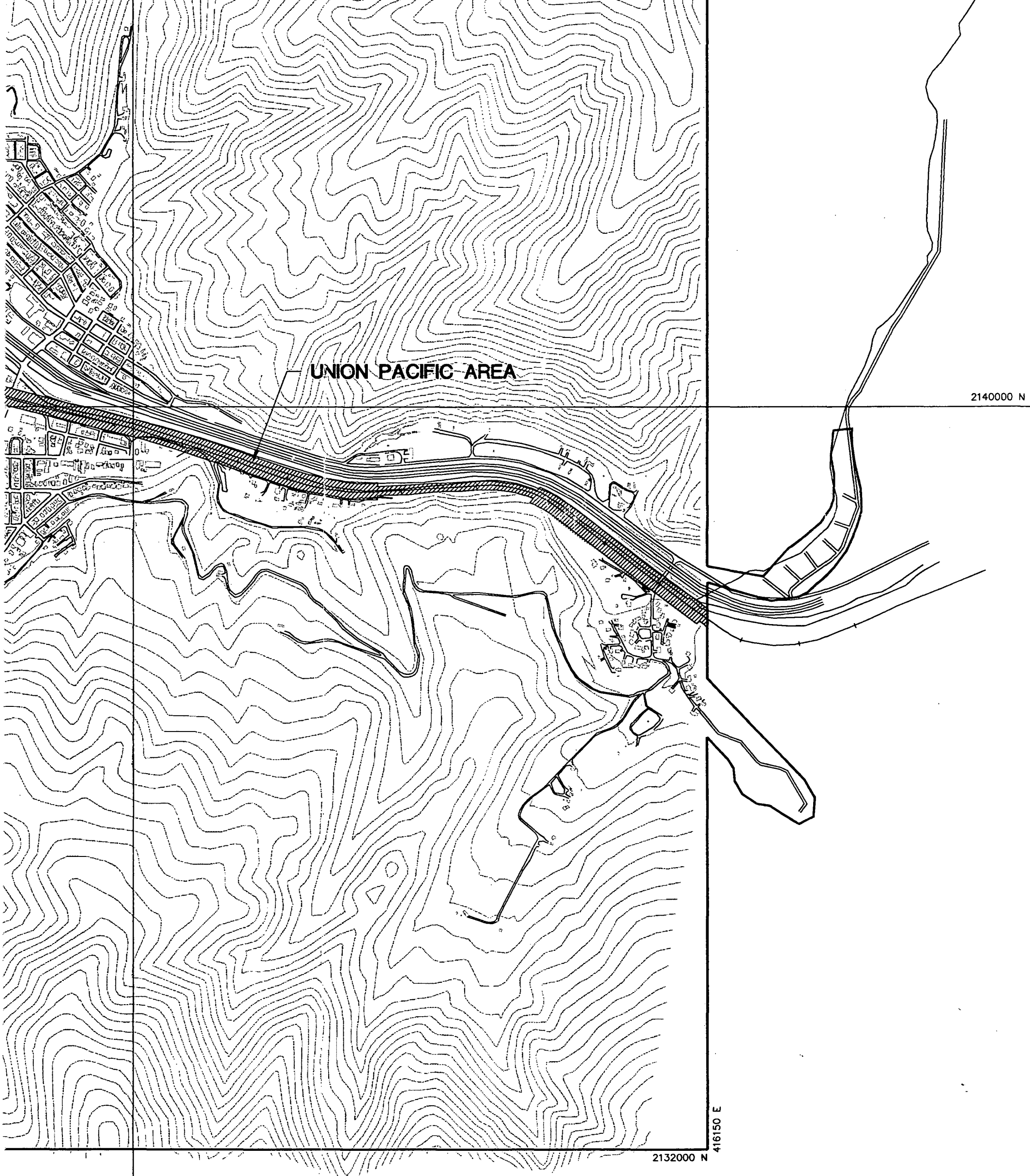
410000 E

2149500 N

416150 E

UNION PACIFIC AREA

2140000 N

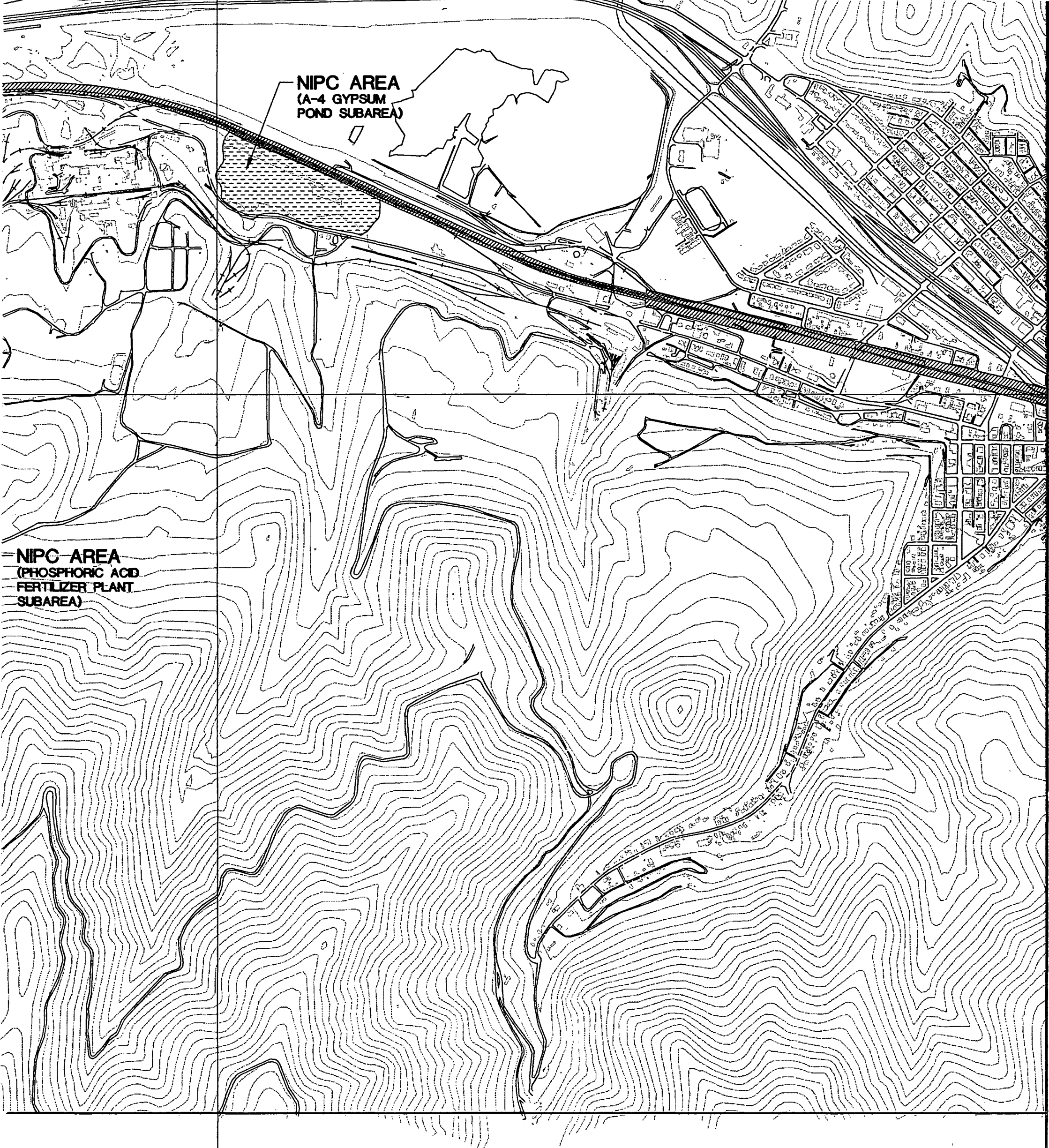


# BUNKER HILL SUPERFUND SITE ALLOCATION MAP

DECEMBER 15, 1994  
ATTACHMENT B

BHSF 13.13.4 v.1  
64621

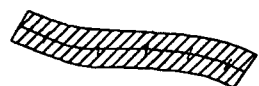




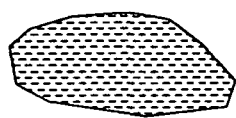
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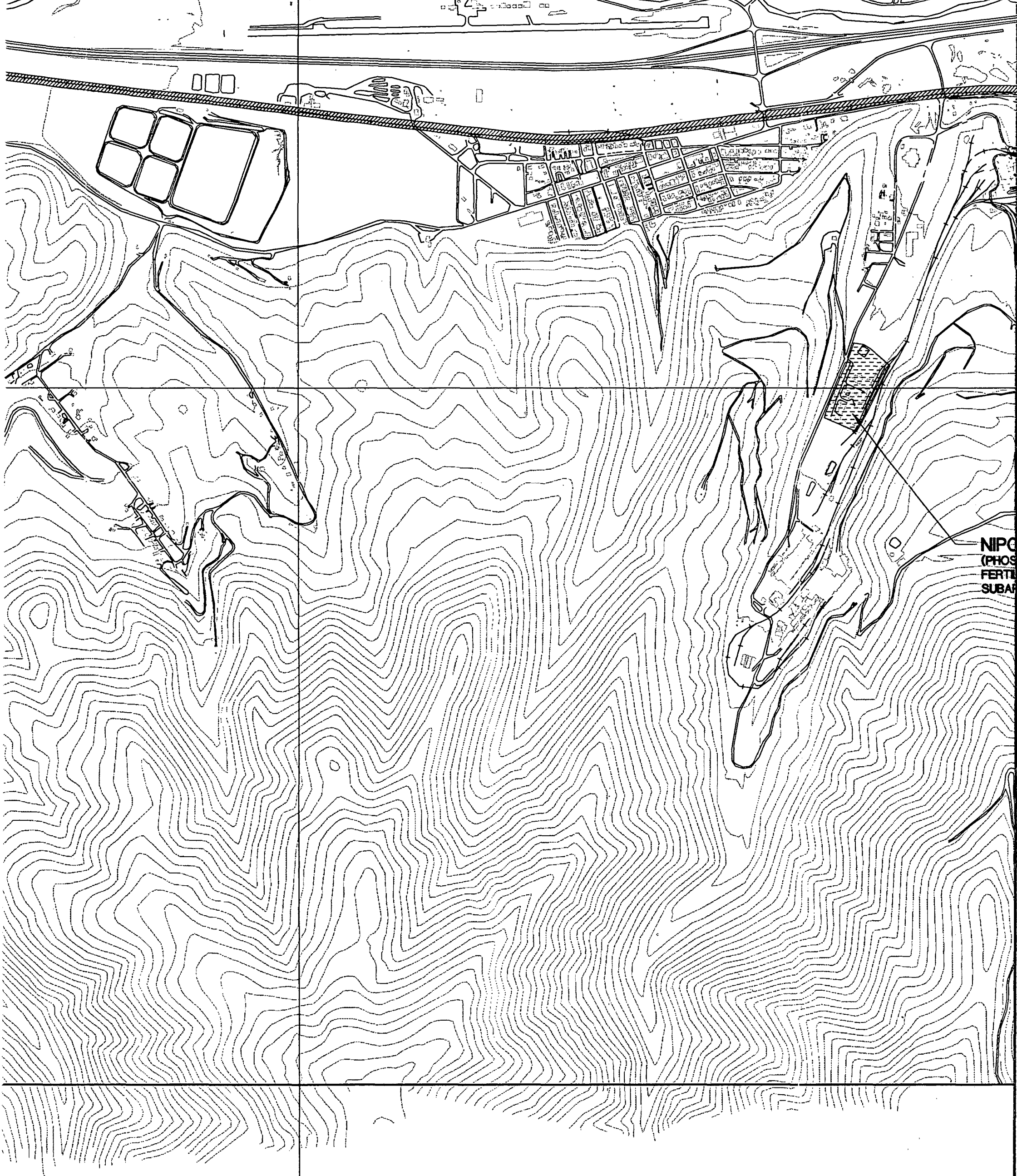
UNION PACIFIC AREA



NIPC AREA



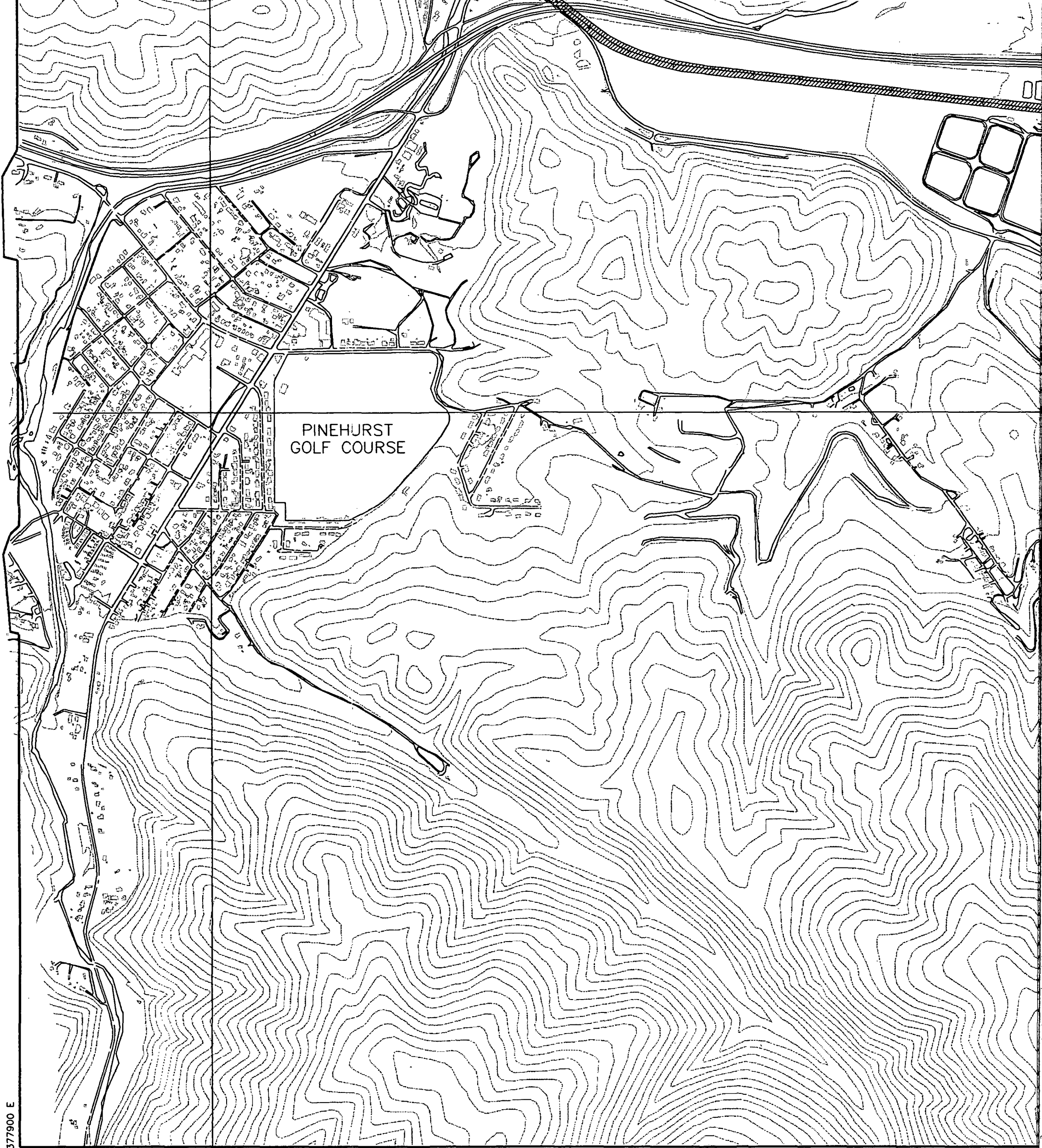
SITE BOUNDARY



**NOTE:** The boundary of the Union Pacific Area as set forth on this attachment includes those areas in which the UPRR has a property interest and which: 1) are contiguous to the UPRR Wallace Branch main line; and 2) which have been clearly used by UPRR as a right-of-way as indicated by the presence of the track or ballast.

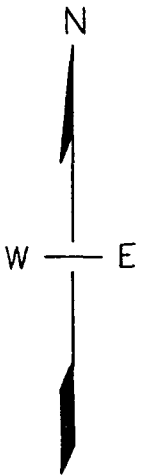
The railroad right-of-way shown on this Allocation Map is based on information obtained from the Right-of-Way and Track Map, Oregon-Washington Railroad and Navigation Company, Branch Line - Tekoa to Wallace, Drawing Idaho-3, Sheets 16, 17 and 18, June 30, 1916 (Revised December 31, 1927). If discrepancies exist between this Allocation Map and the Right-of-Way and Track Map, the latest revision of the latter shall govern.





377900 E

2132000 N



SCALE: 1" = 1000 FEET

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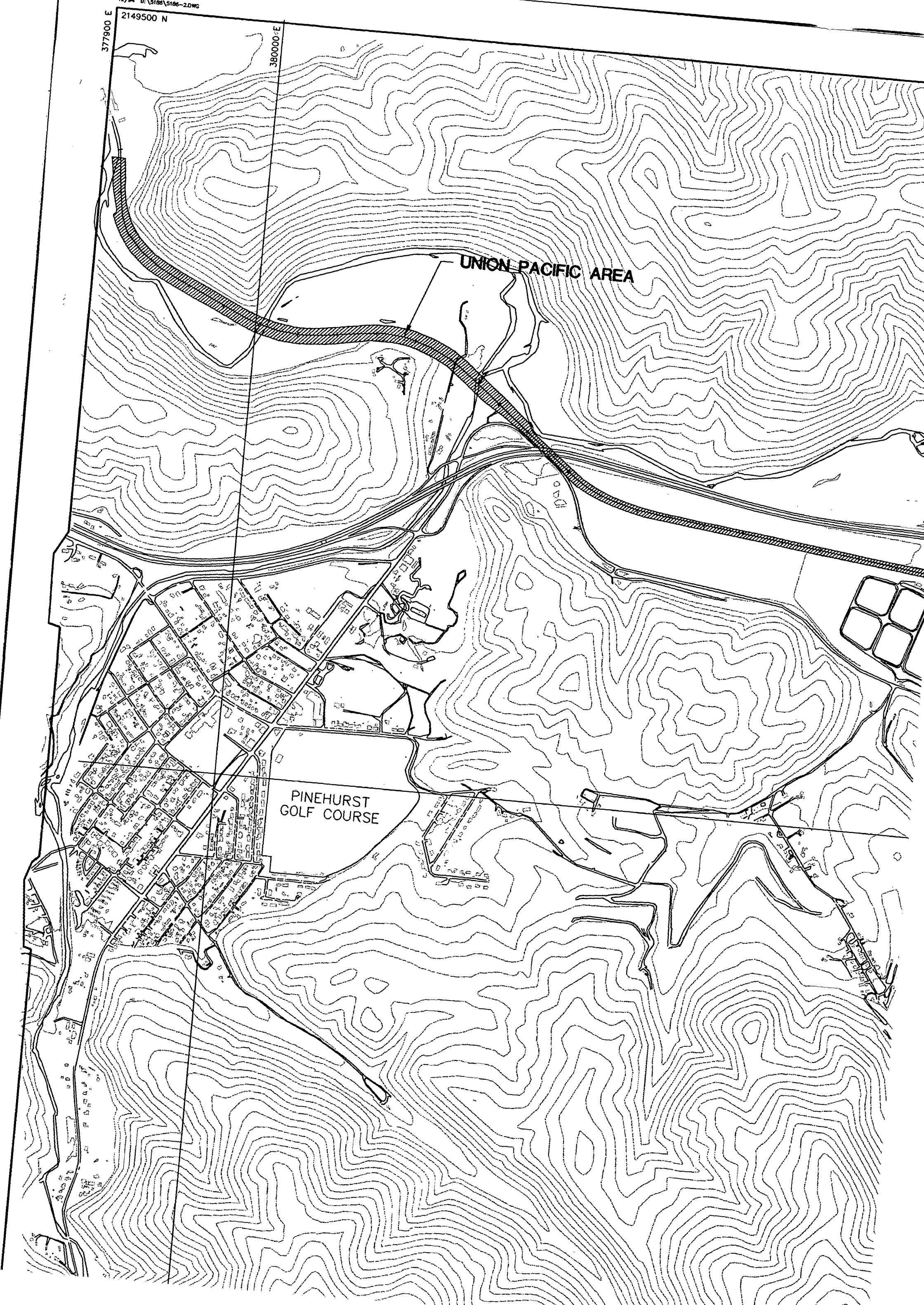
377900 E

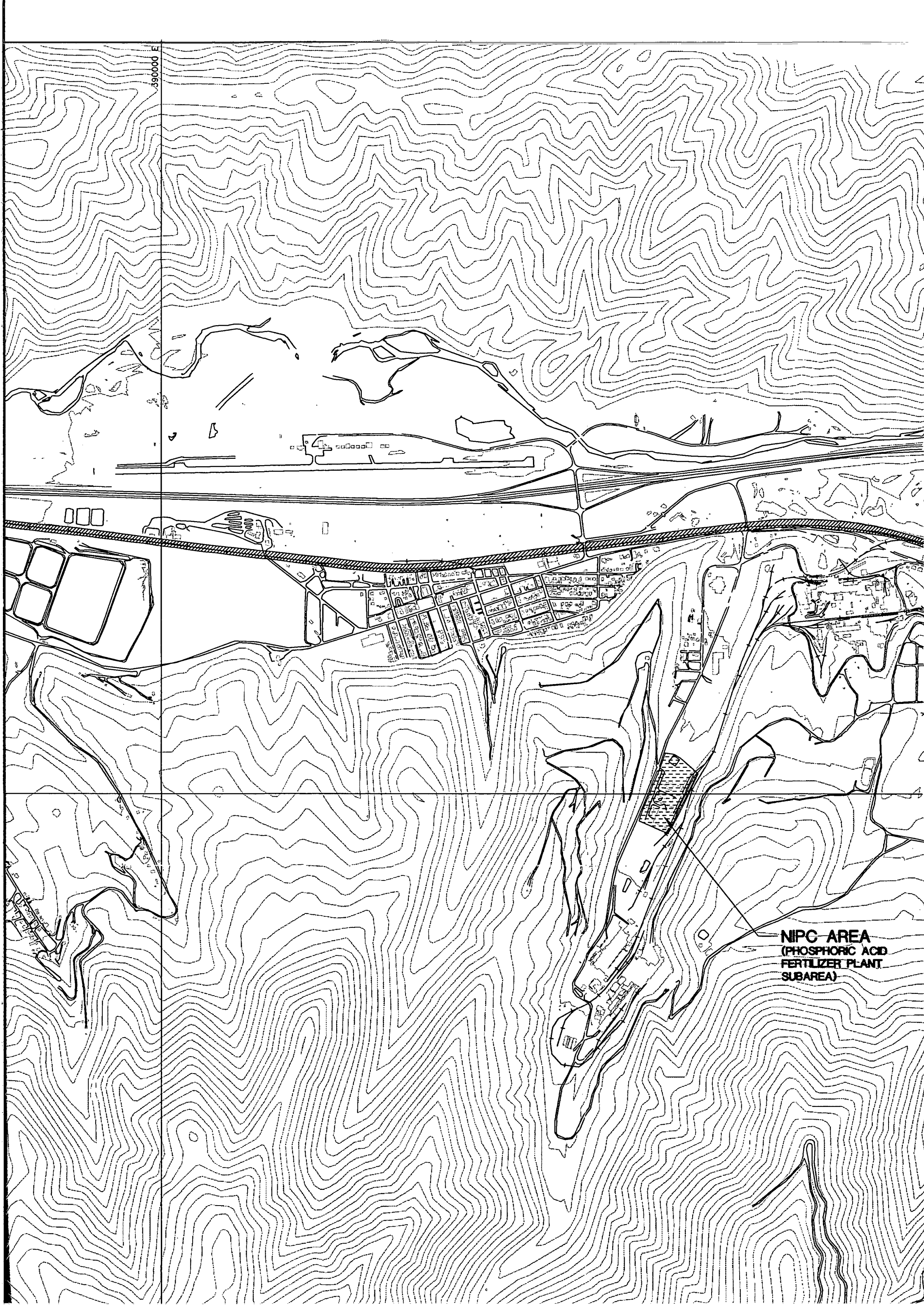
2149500 N

380000 E

UNION PACIFIC AREA

PINEHURST  
GOLF COURSE





390000 E

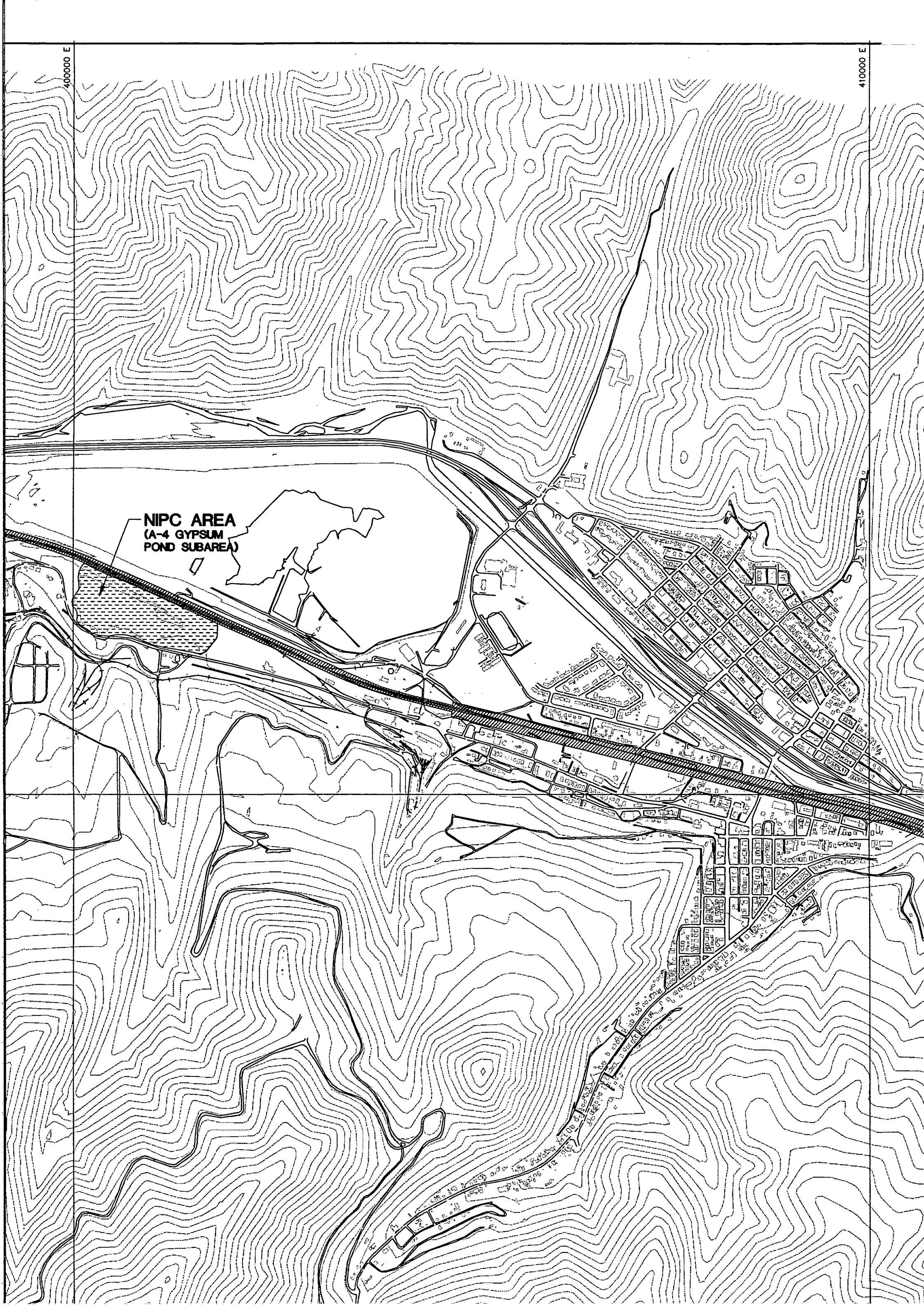
NIPC AREA  
(PHOSPHORIC ACID  
FERTILIZER PLANT  
SUBAREA)



400000 E

410000 E

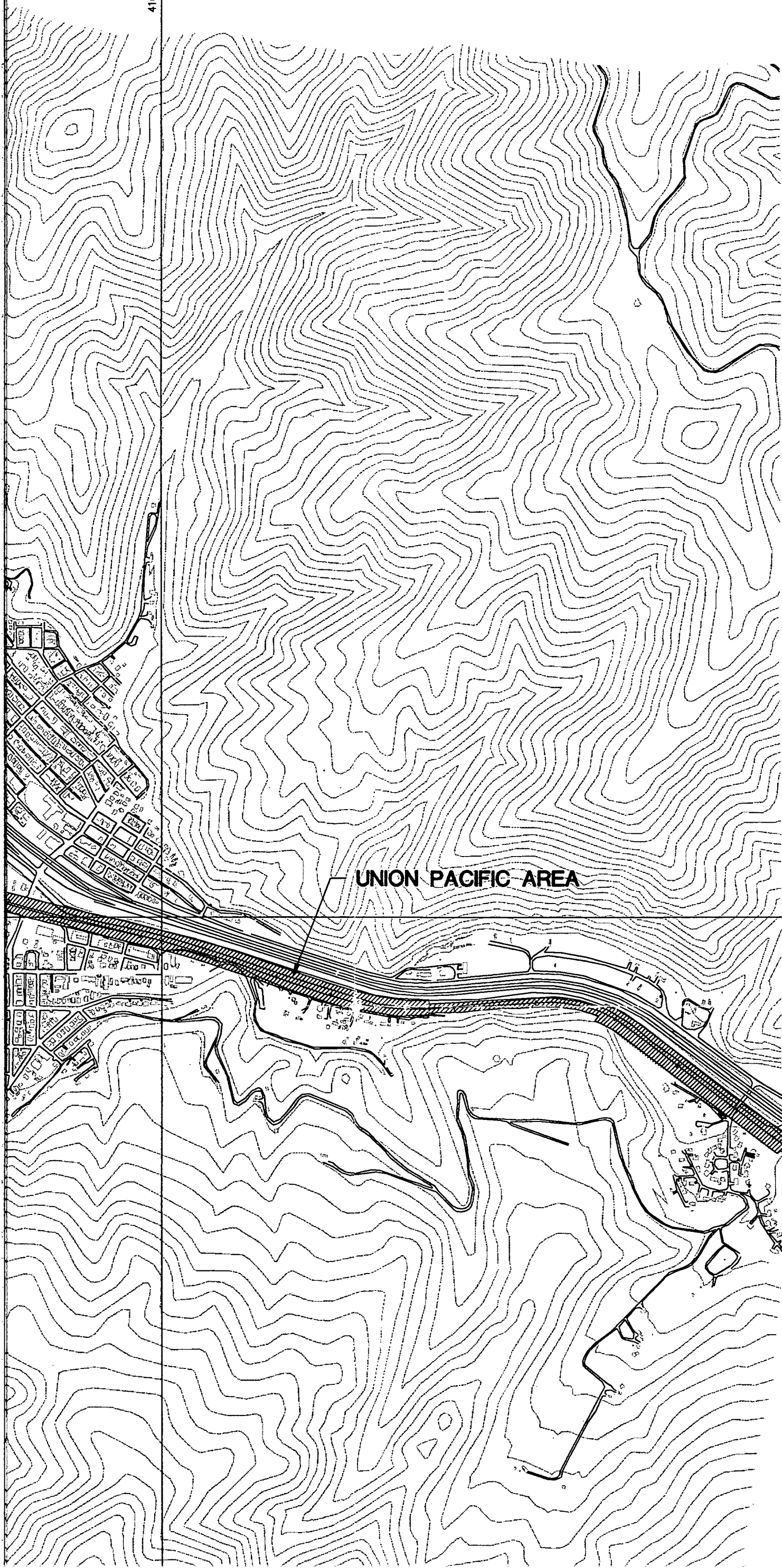
NIPC AREA  
(A-4 GYPSUM  
POND SUBAREA)



410000 E

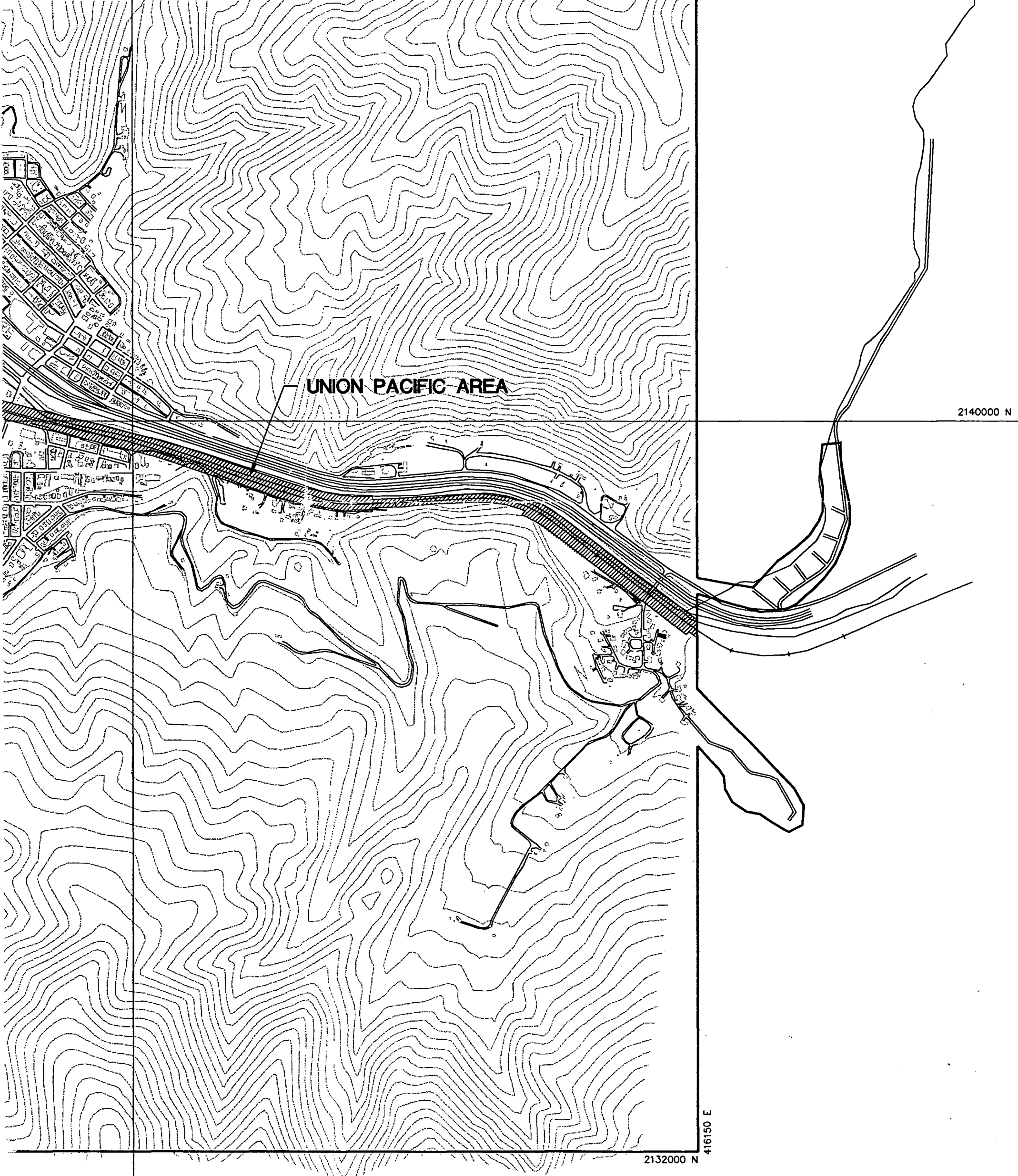
2149500 N

416150 E



UNION PACIFIC AREA

2140000 N

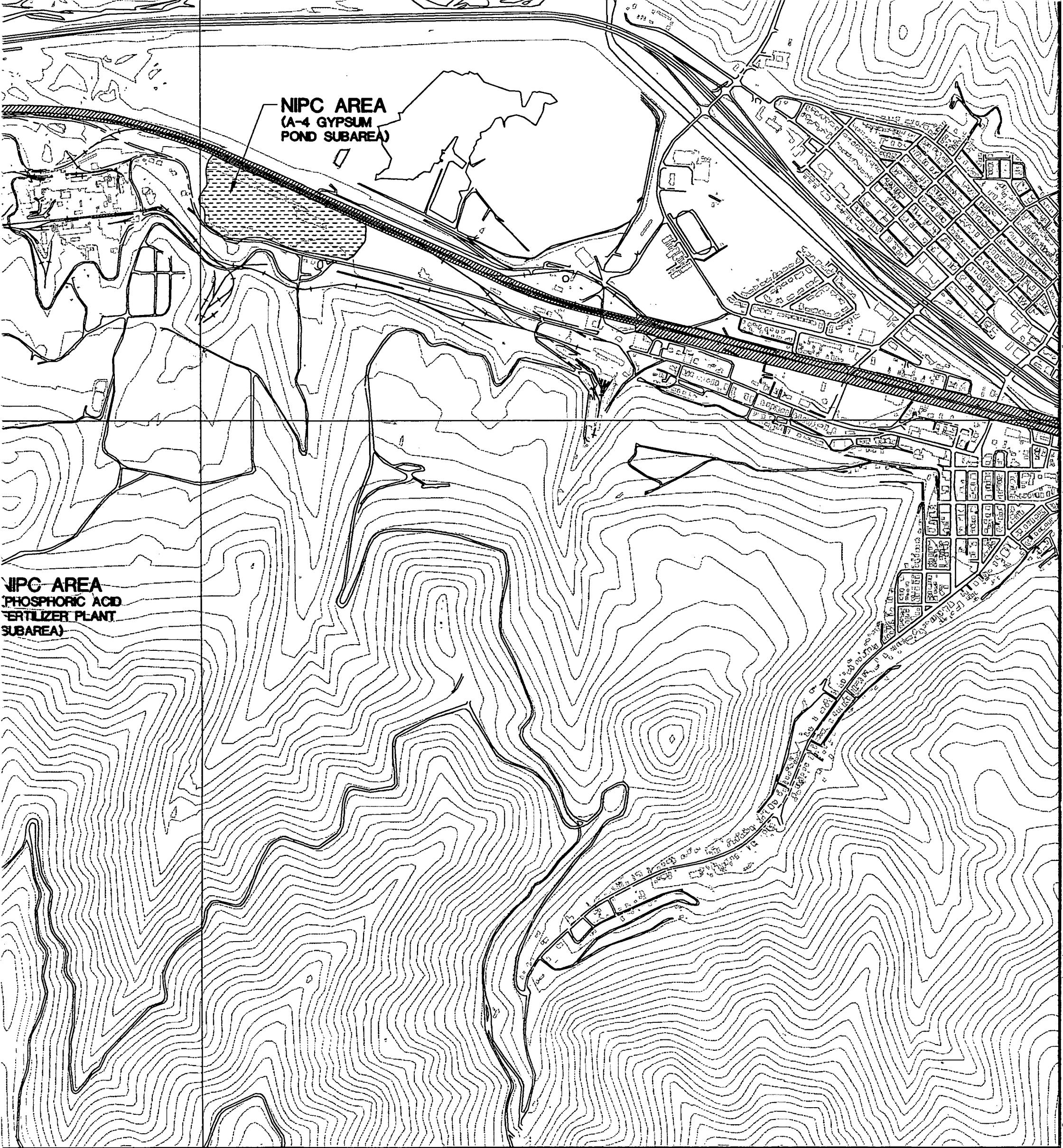


# BUNKER HILL SUPERFUND SITE ALLOCATION MAP

DECEMBER 15, 1994

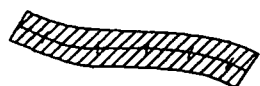
ATTACHMENT B



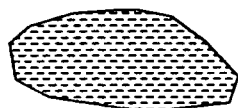


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## LEGEND:



UNION PACIFIC AREA

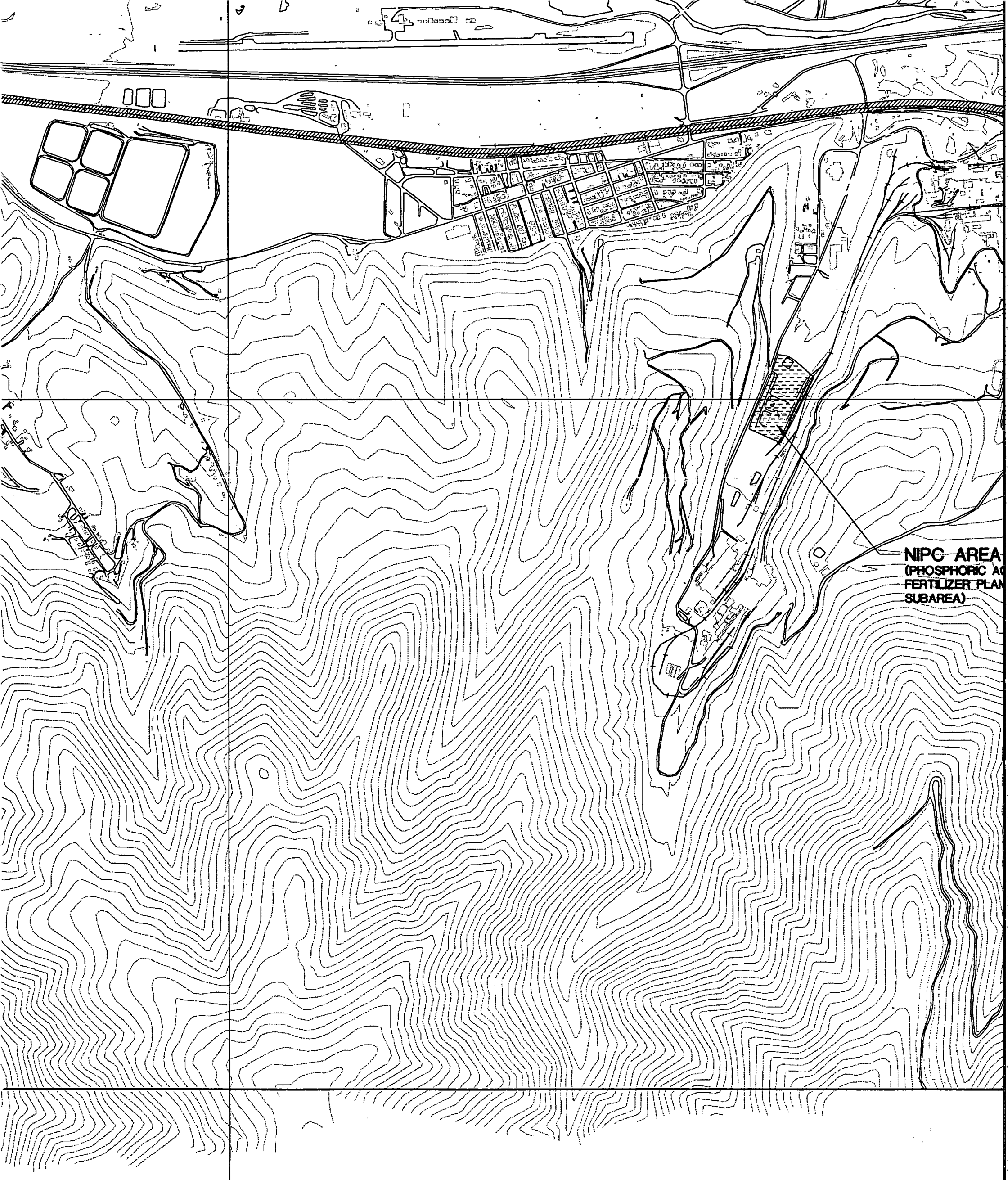


NIPC AREA



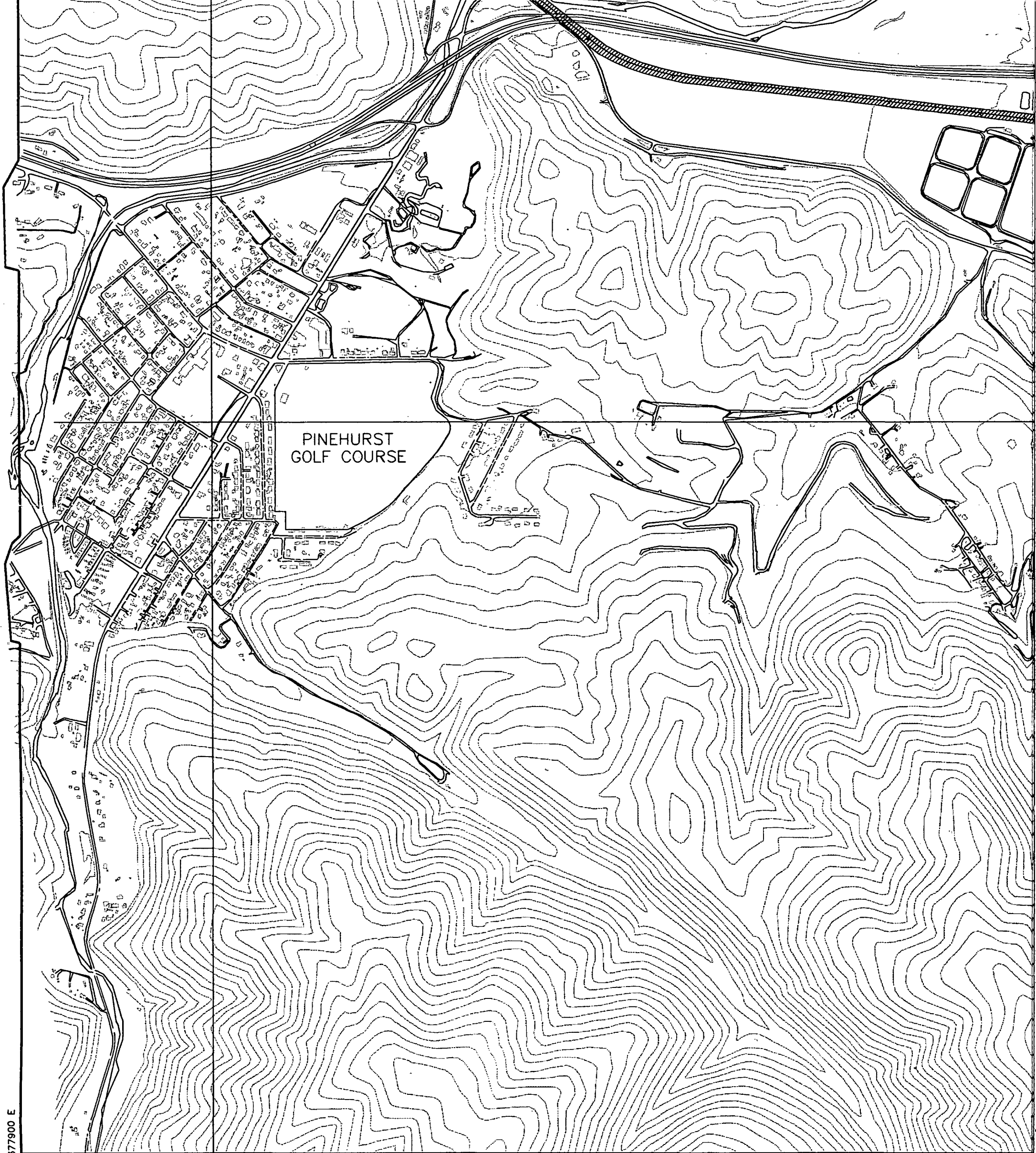
SITE BOUNDARY



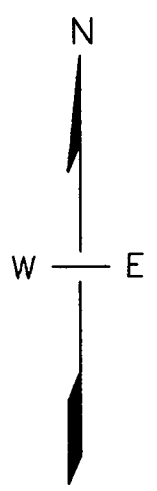


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377900 E  
2132000 N



SCALE: 1" = 1000 FEET

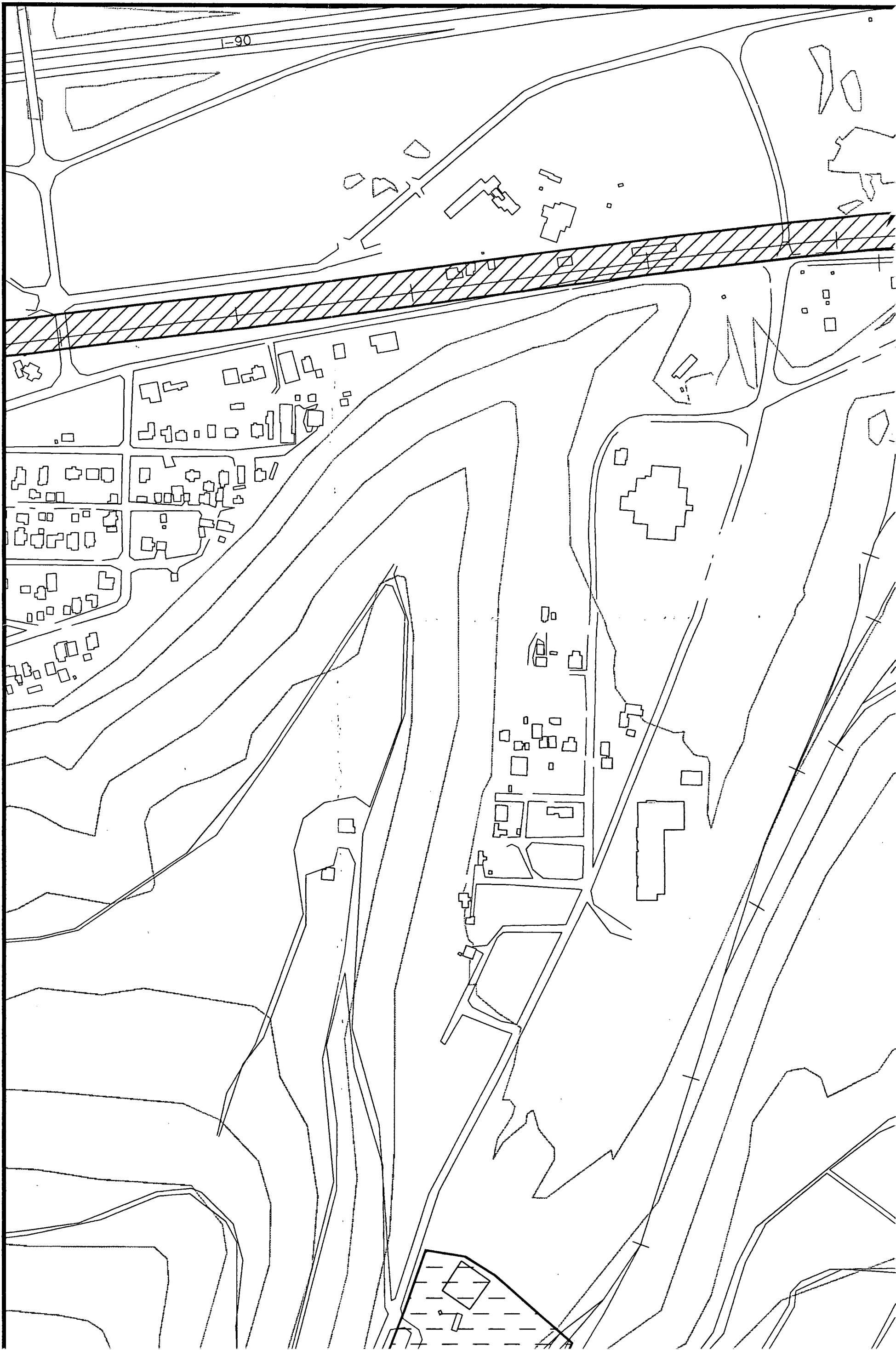
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## ***Attachment C***

### ***Map for the NIPC Area and SubAreas***

1 of 2



**UNION PACIFIC AREA**  
(SEE ATTACHMENT D)

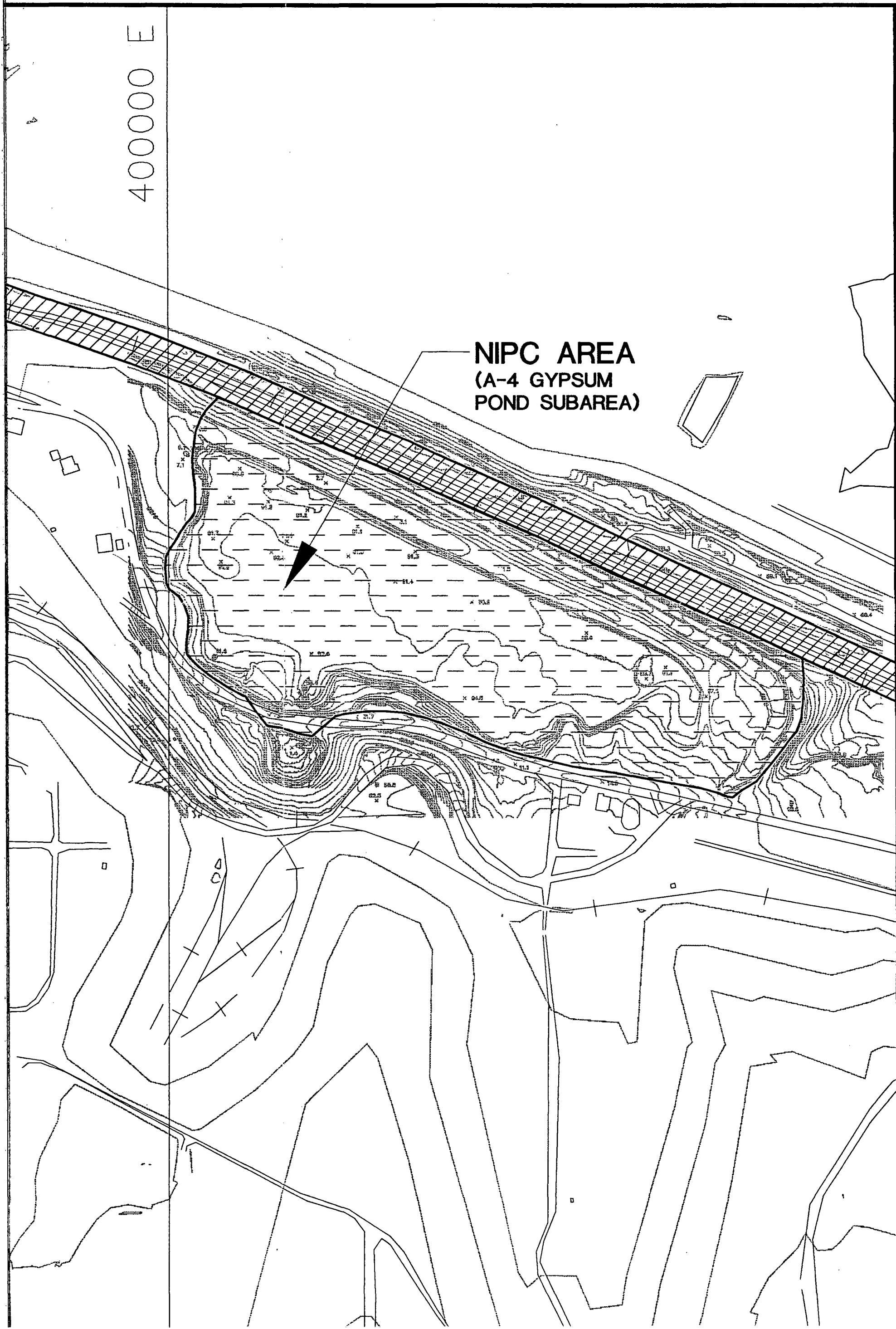
400000 E





400000 E

NIPC AREA  
(A-4 GYPSUM  
POND SUBAREA)



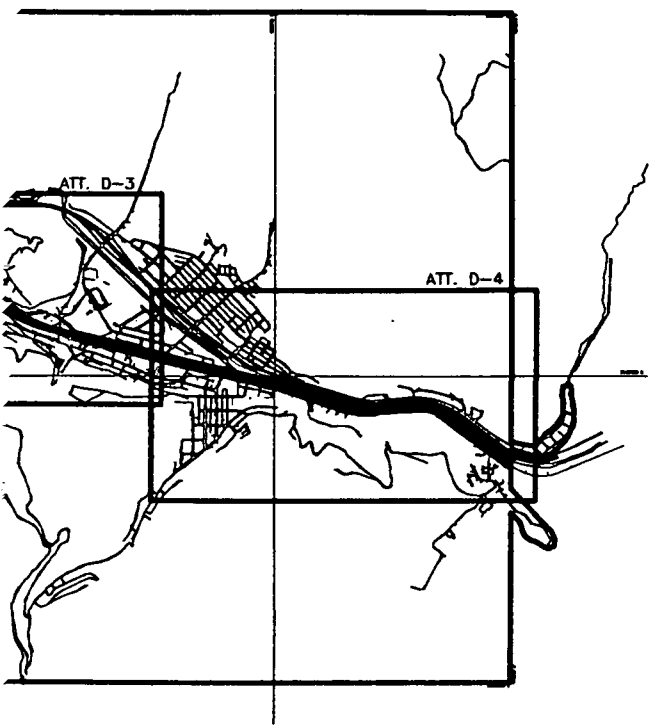
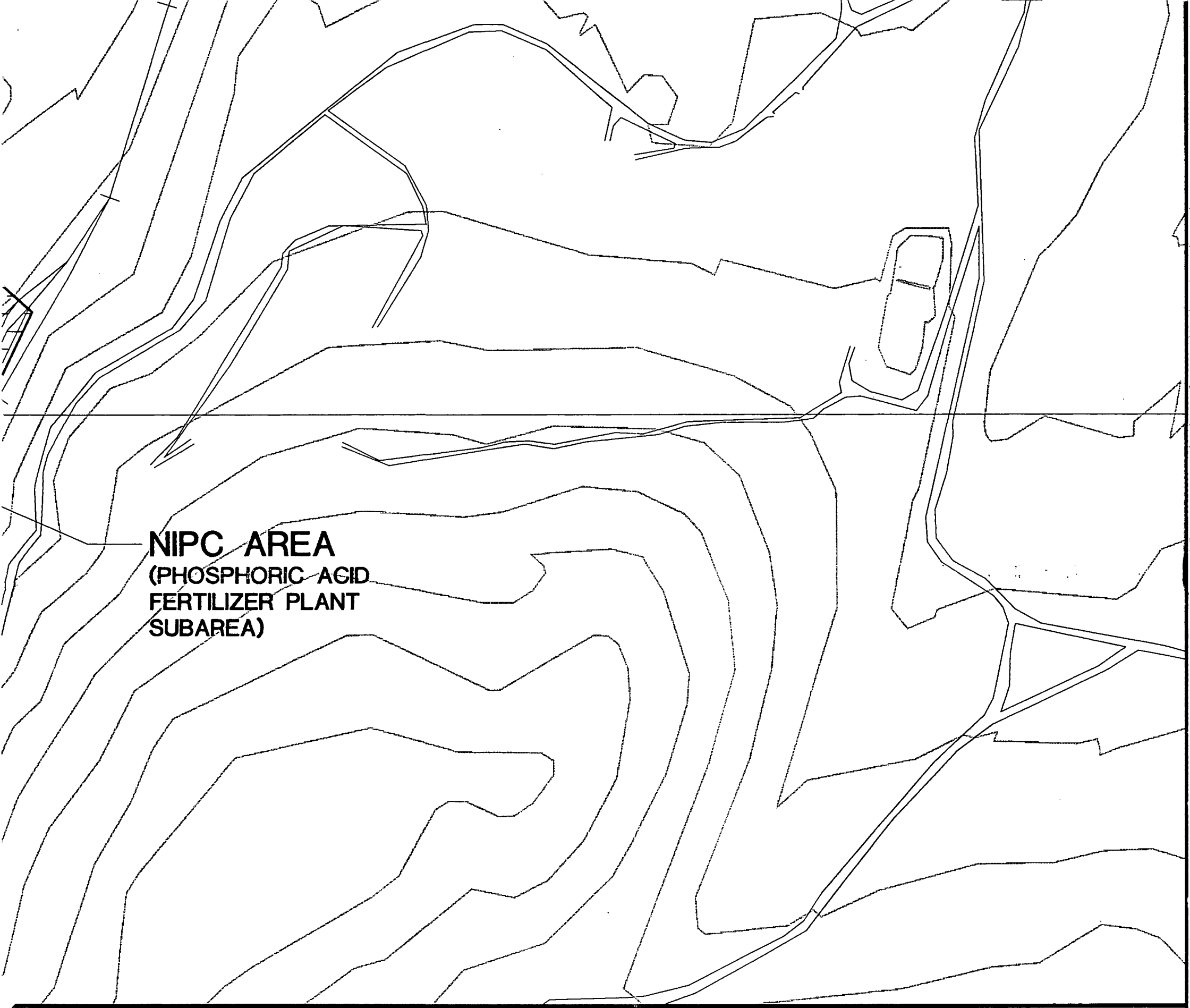


**BUNKER HILL  
SUPERFUND SITE  
ALLOCATION MAP**

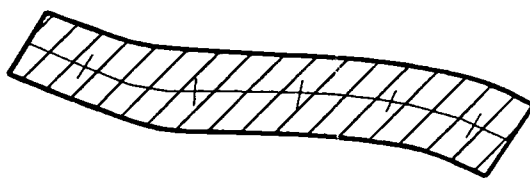
**DECEMBER 15, 1994**

**ATTACHMENT C**

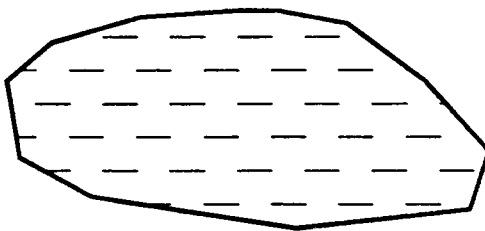




## LEGEND



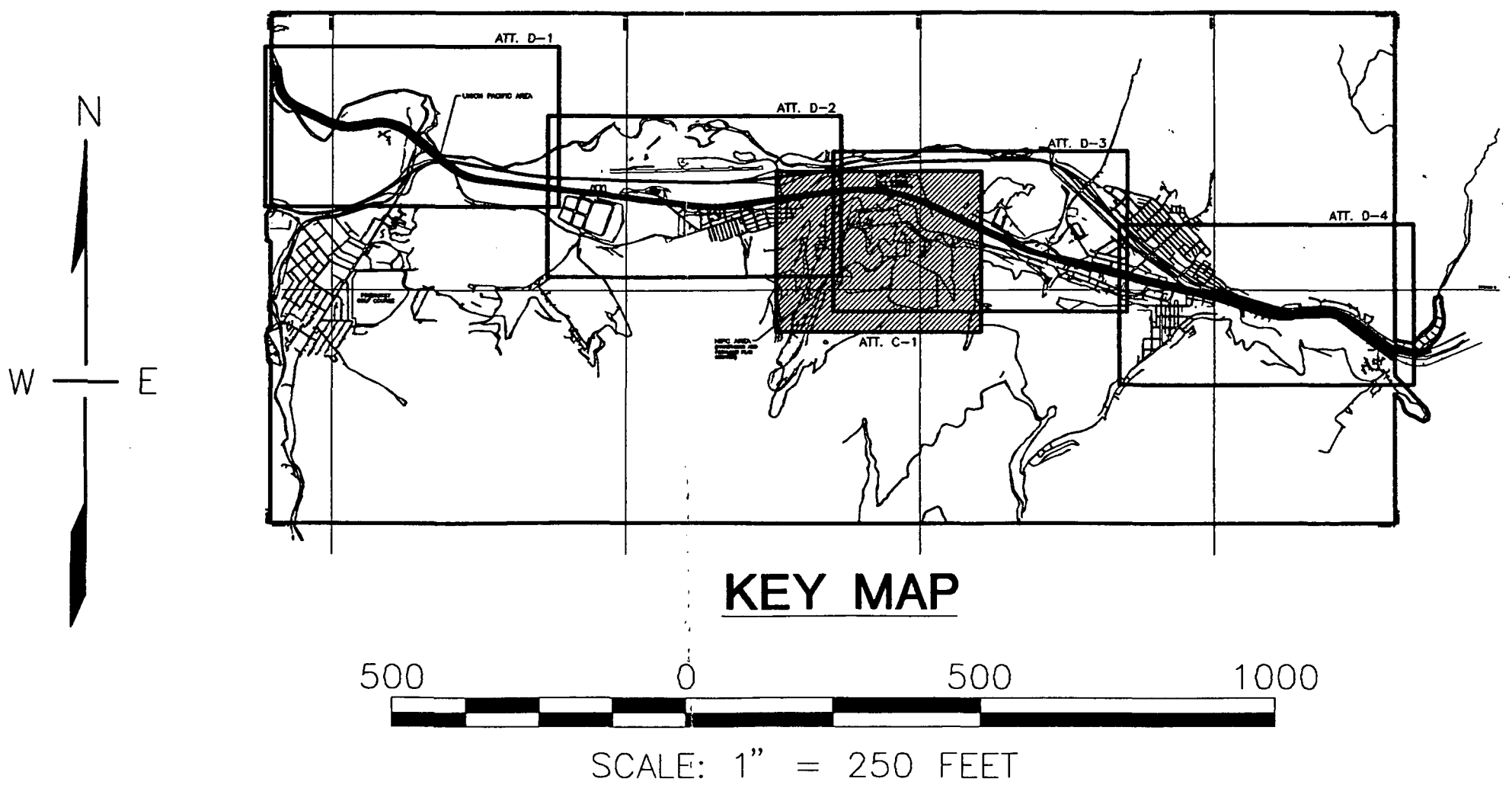
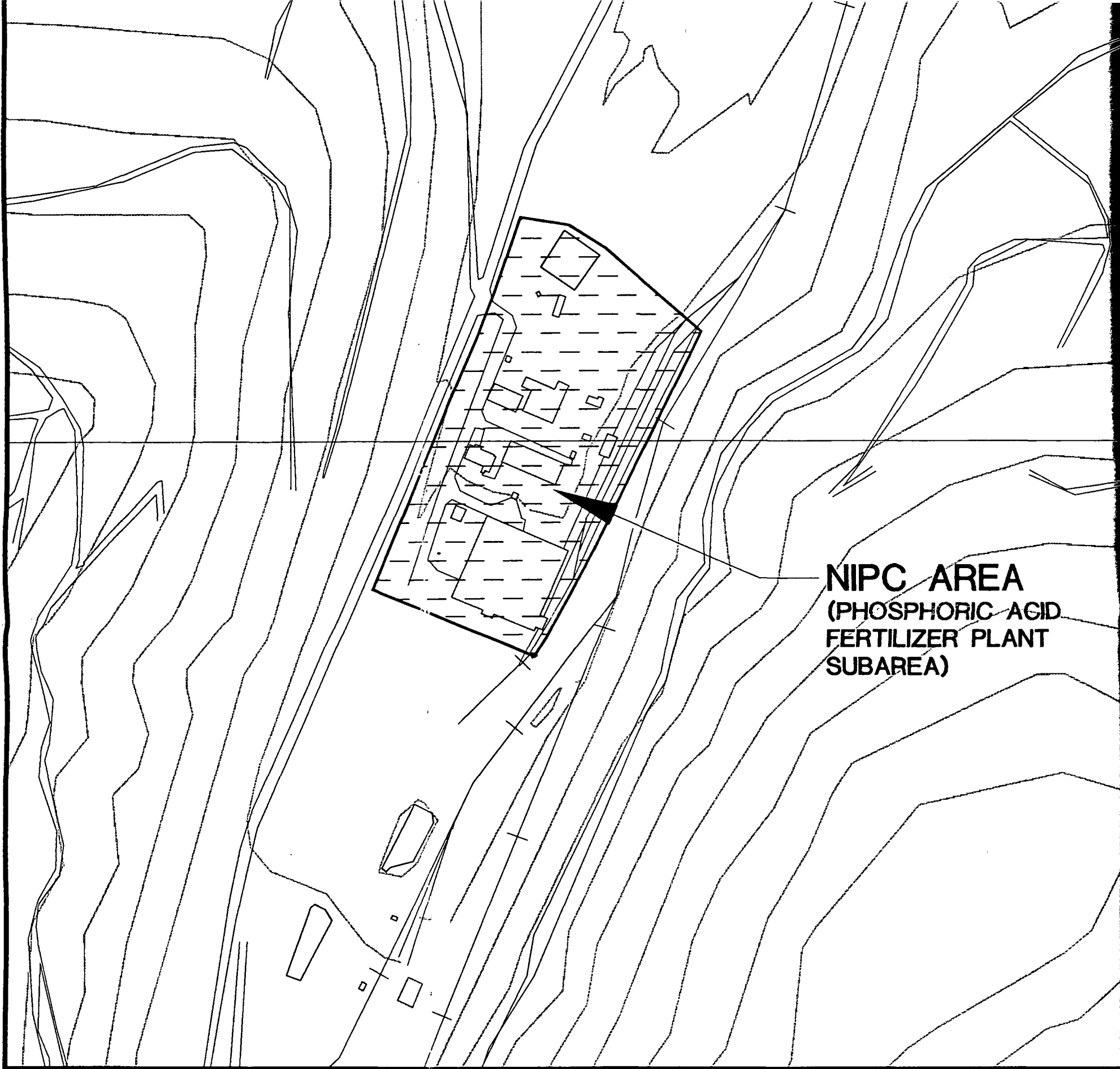
UNION PACIFIC AREA



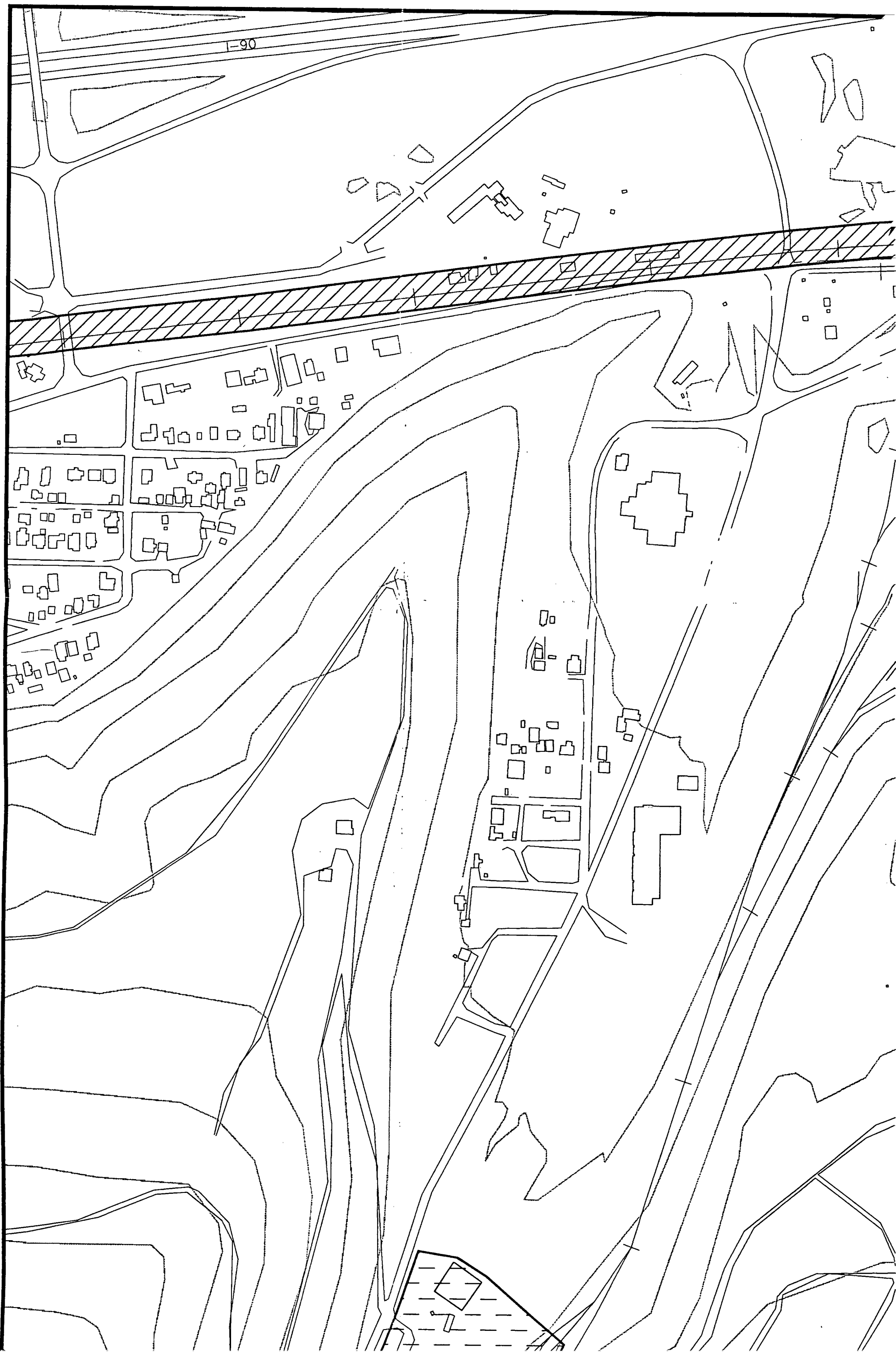
NIPC AREA

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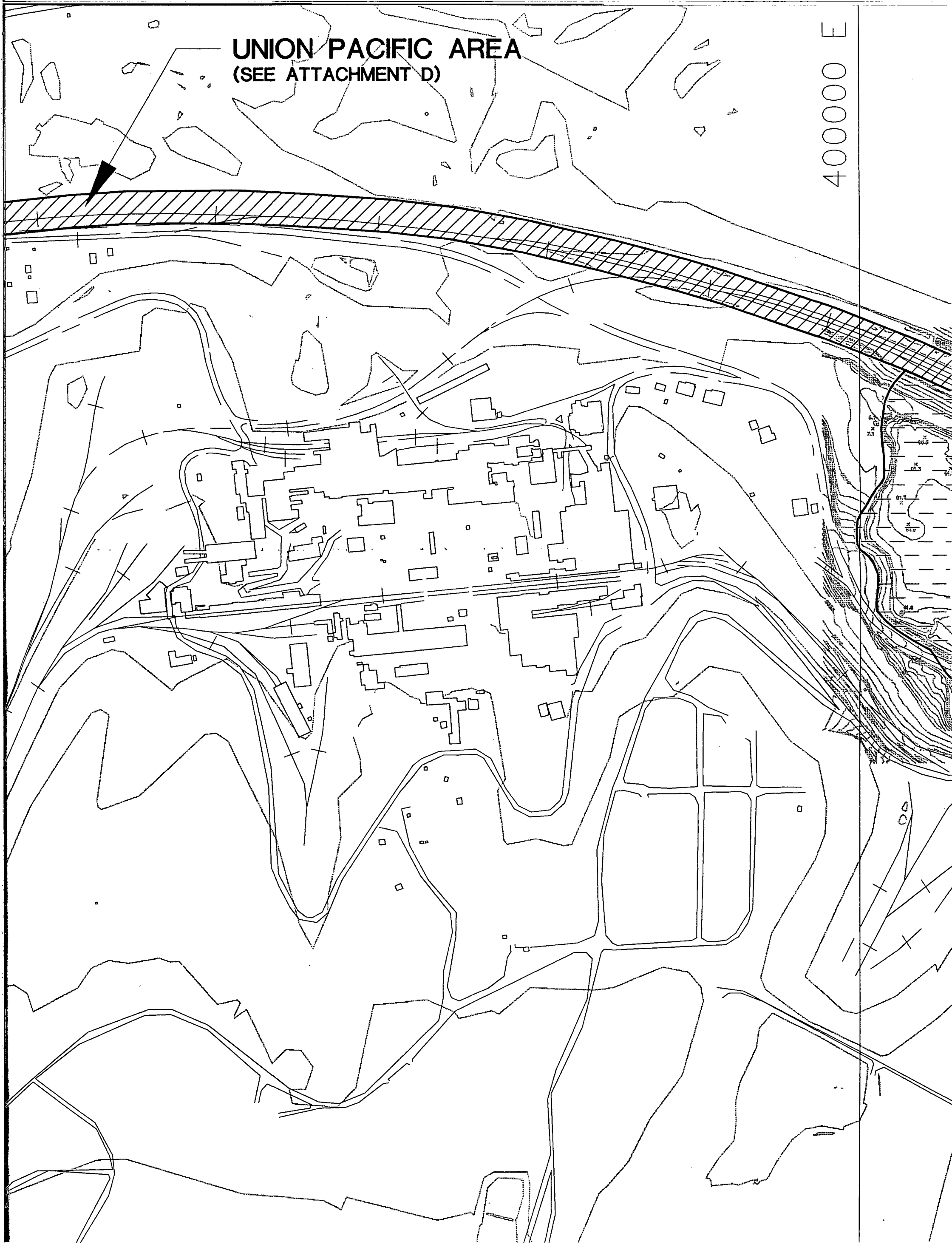


2 of 2



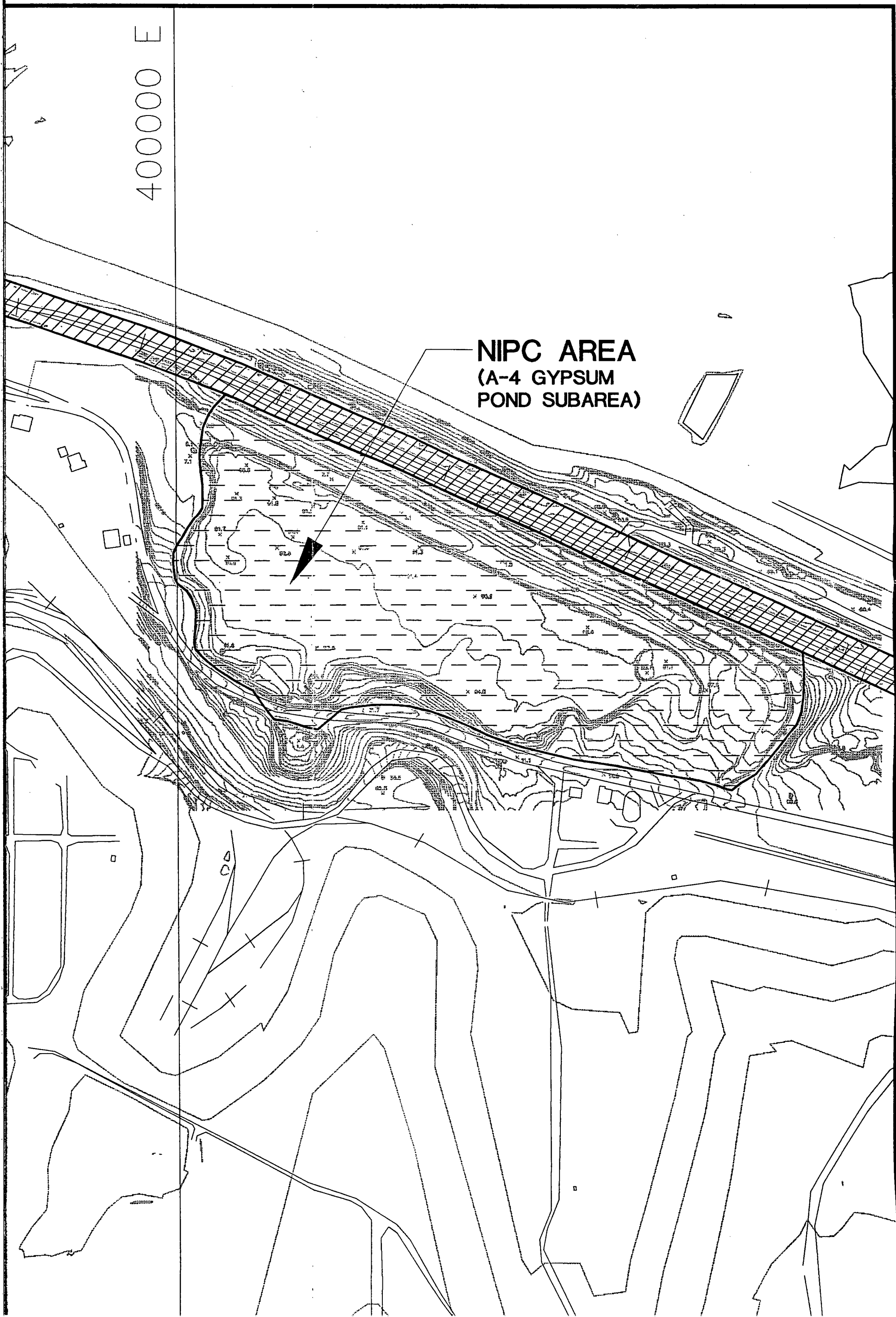
**UNION PACIFIC AREA**  
(SEE ATTACHMENT D)

400000 E



400000 E

NIPC AREA  
(A-4 GYPSUM  
POND SUBAREA)



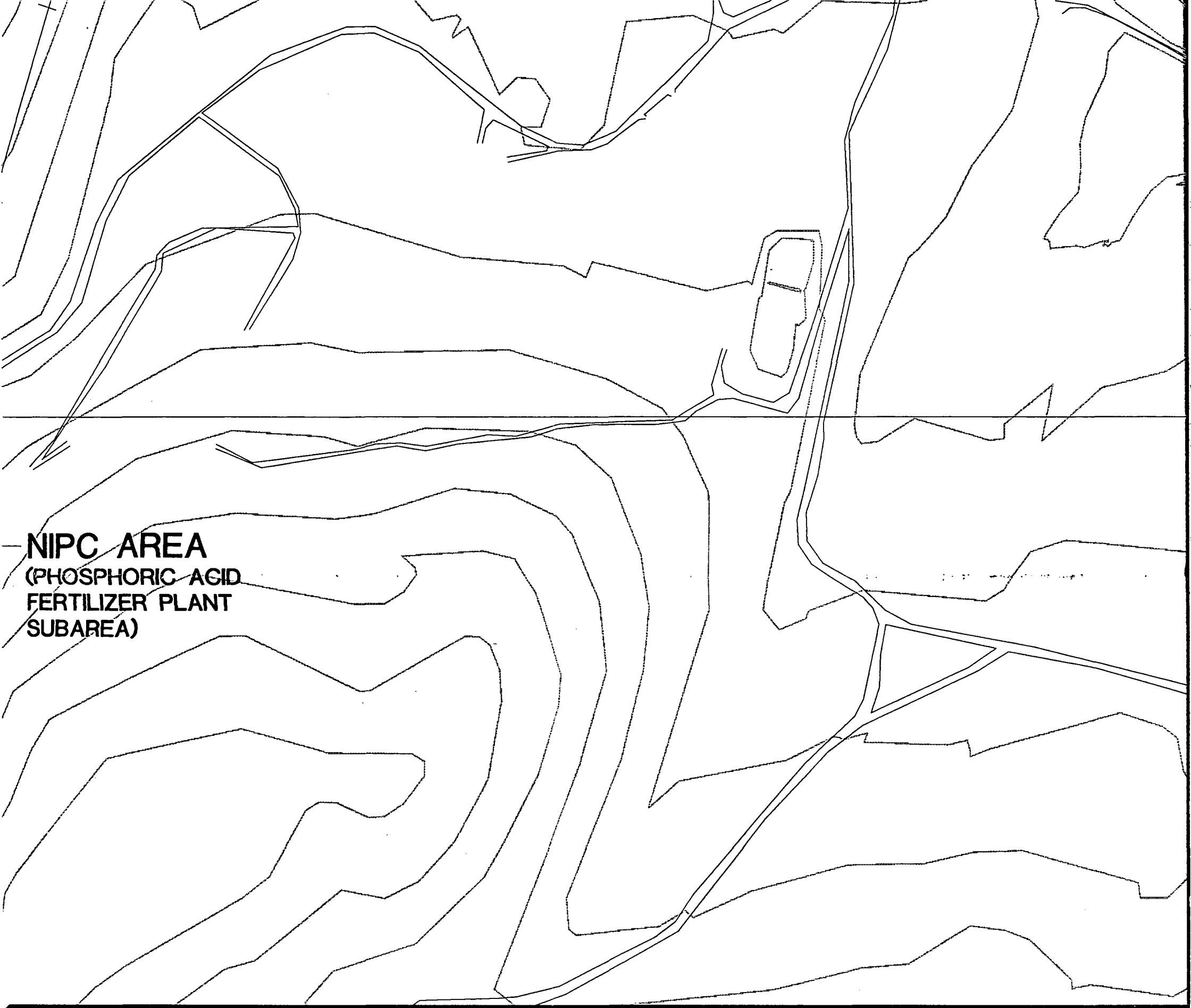


# BUNKER HILL SUPERFUND SITE ALLOCATION MAP

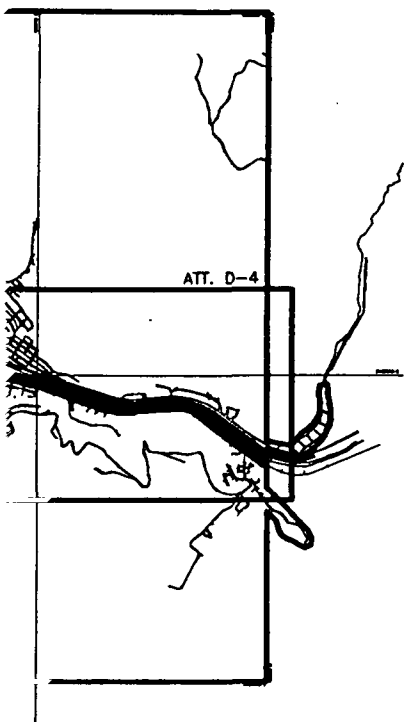
DECEMBER 15, 1994

ATTACHMENT C

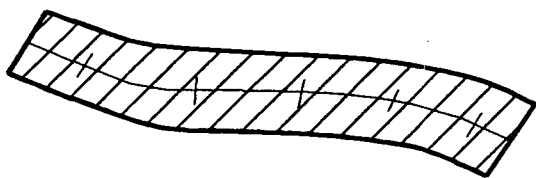
BHSF 13.13.4 v.1  
64621



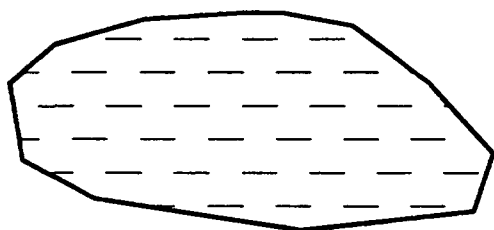
**NIPC AREA**  
(PHOSPHORIC ACID  
FERTILIZER PLANT  
SUBAREA)



## LEGEND



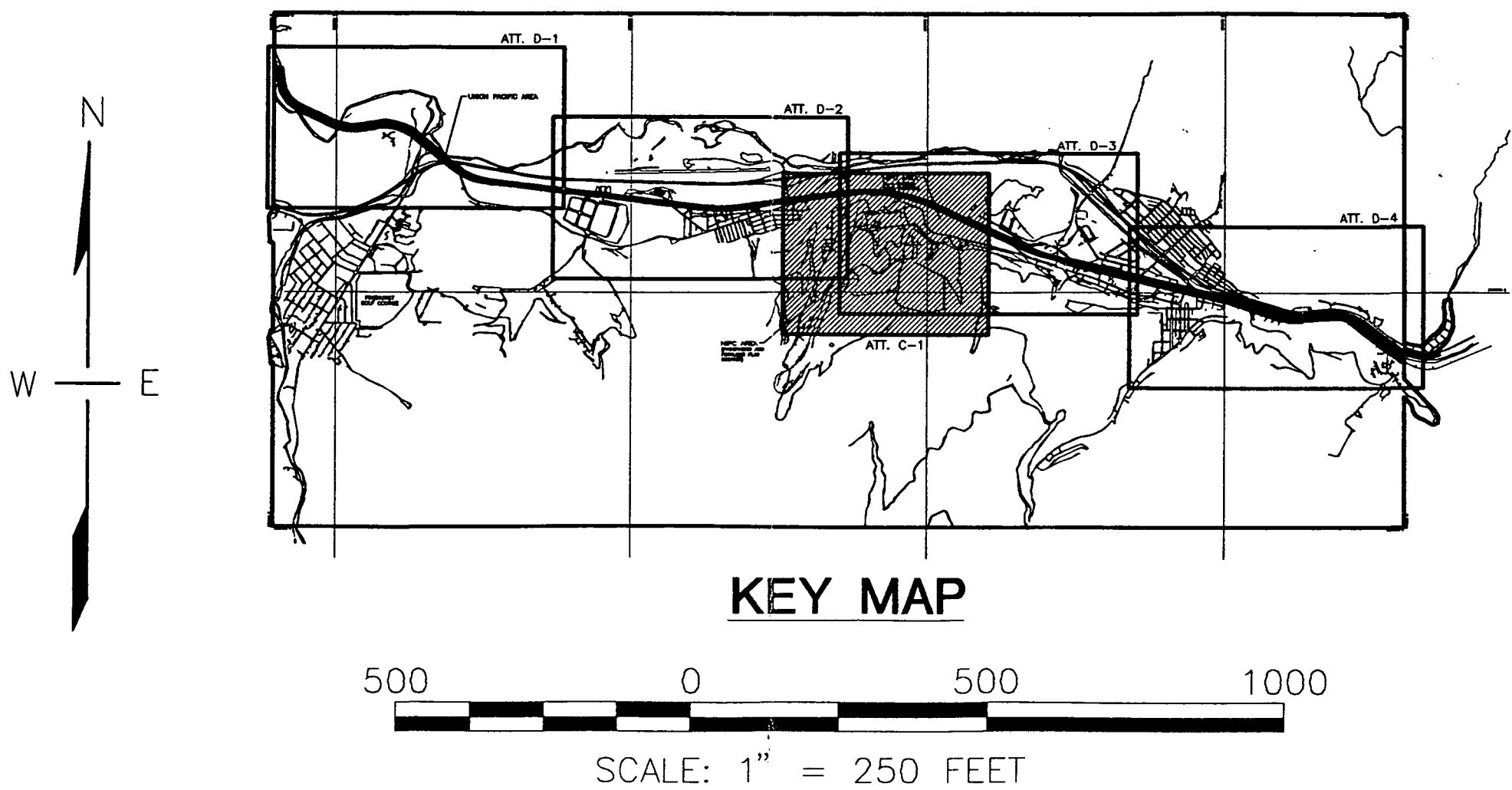
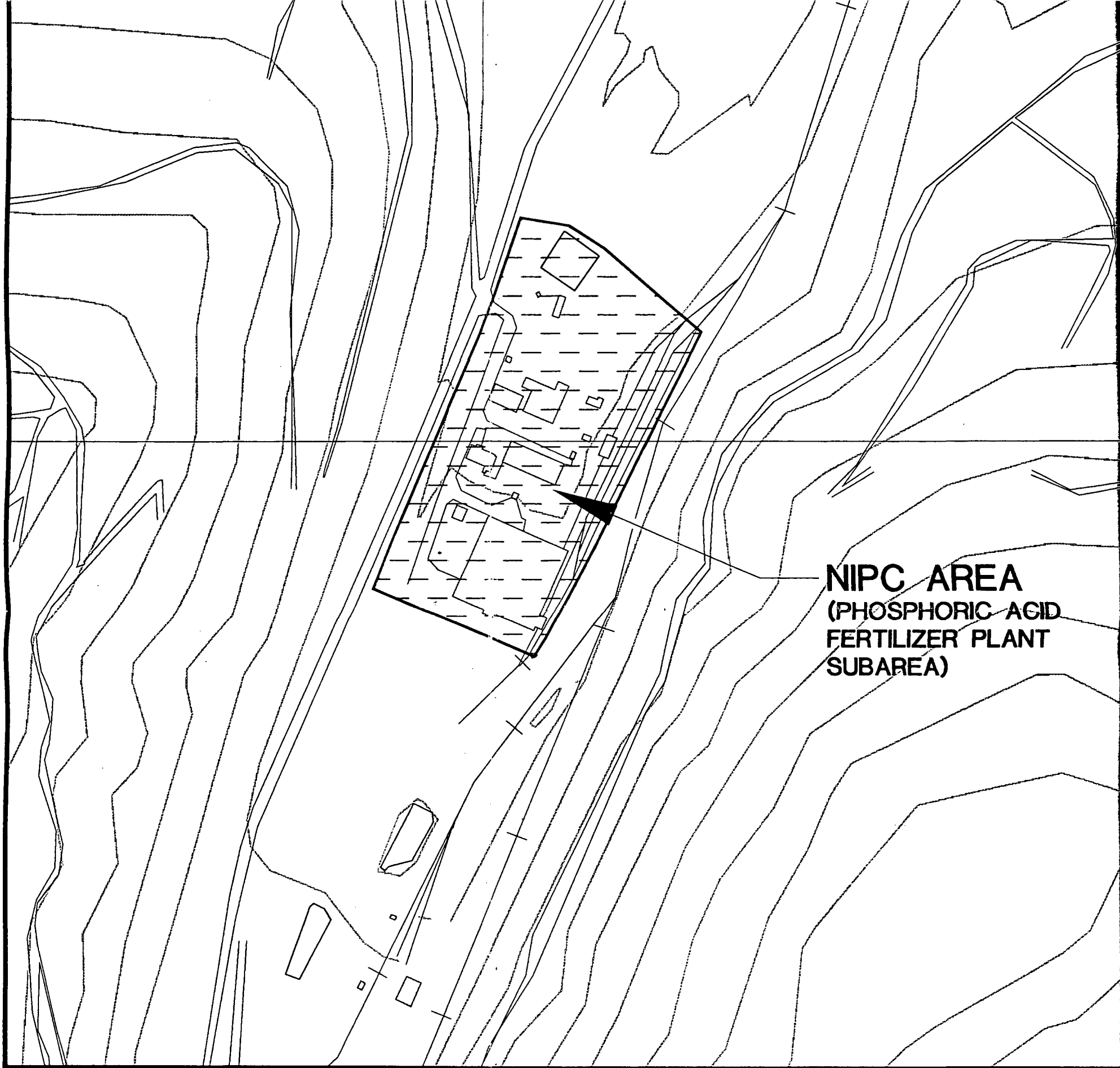
**UNION PACIFIC AREA**



**NIPC AREA**

1000





## ***Attachment D***

### ***Map for the Union Pacific Area***

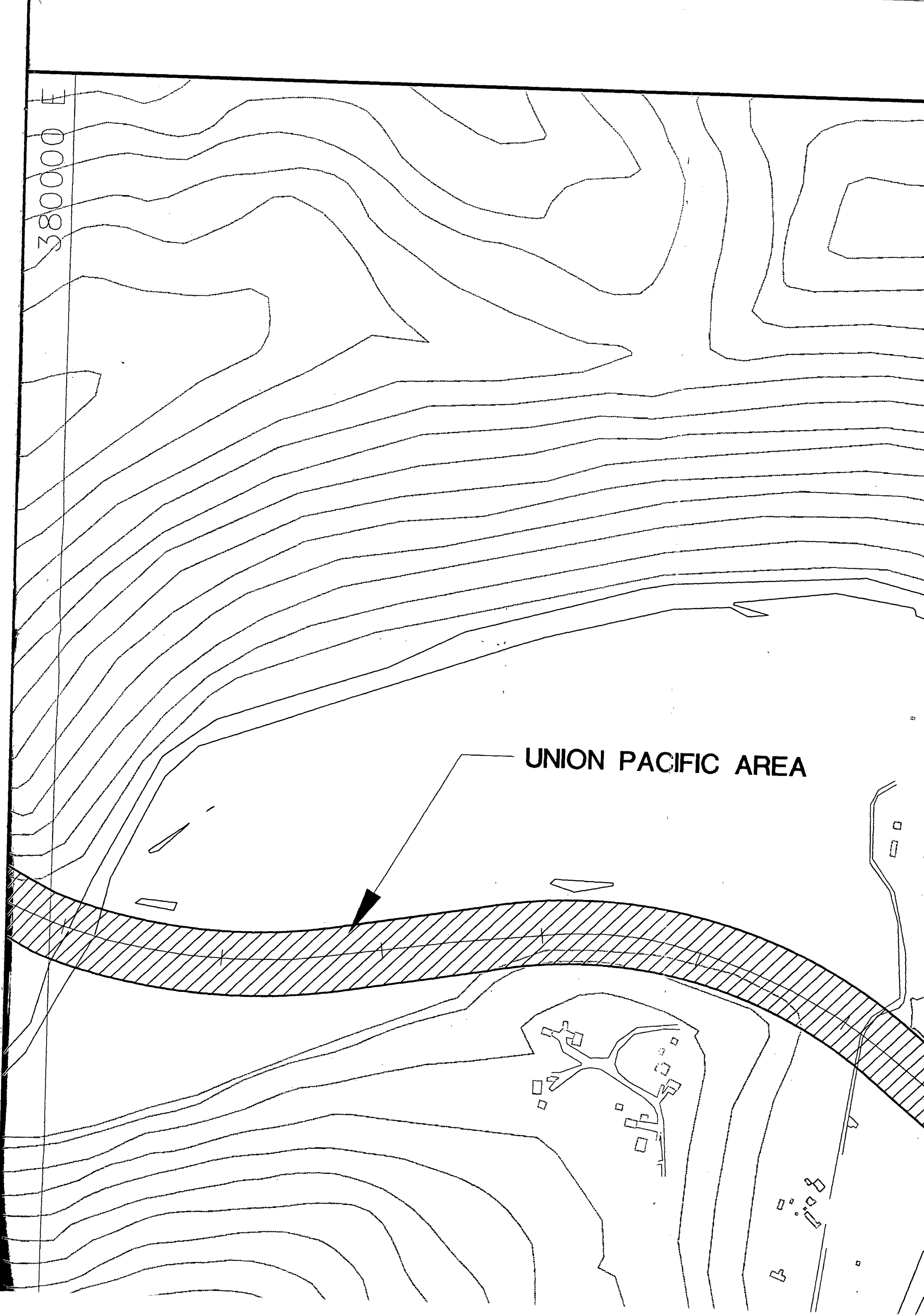
1 of 4



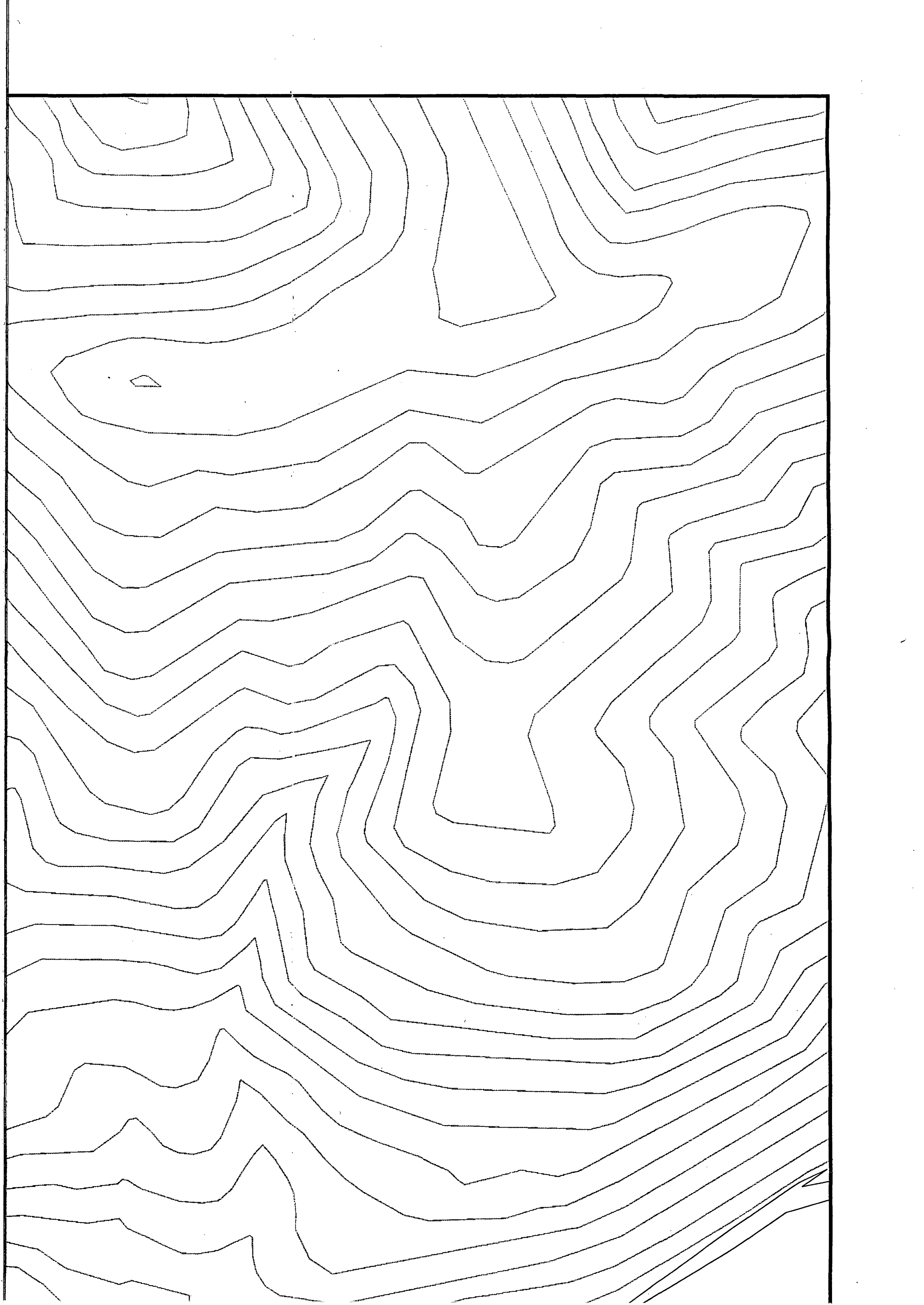
SUPERFUND SITE BOUNDARY

380000 E

UNION PACIFIC AREA









# BUNKER HILL SUPERFUND SITE ALLOCATION MAP

includes those areas  
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as a right-of-way

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Allocation Map  
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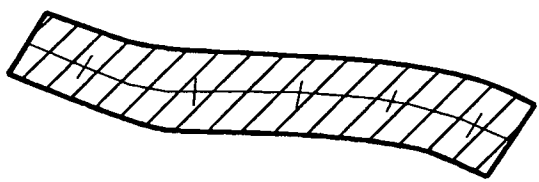
DECEMBER 15, 1994  
ATTACHMENT D-1 of 4

BHSF 13.13.40.1  
64621





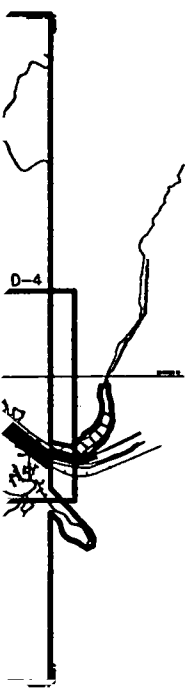
## LEGEND

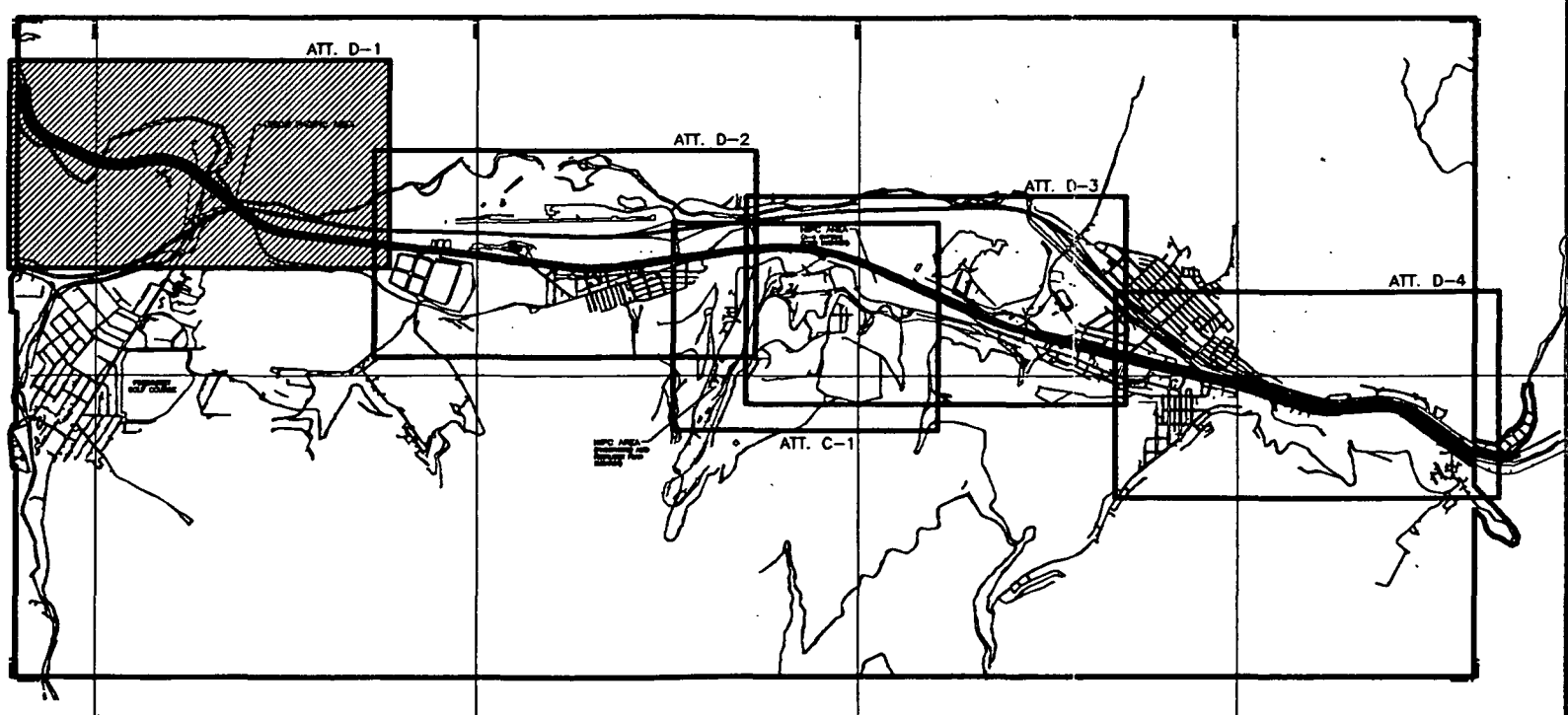
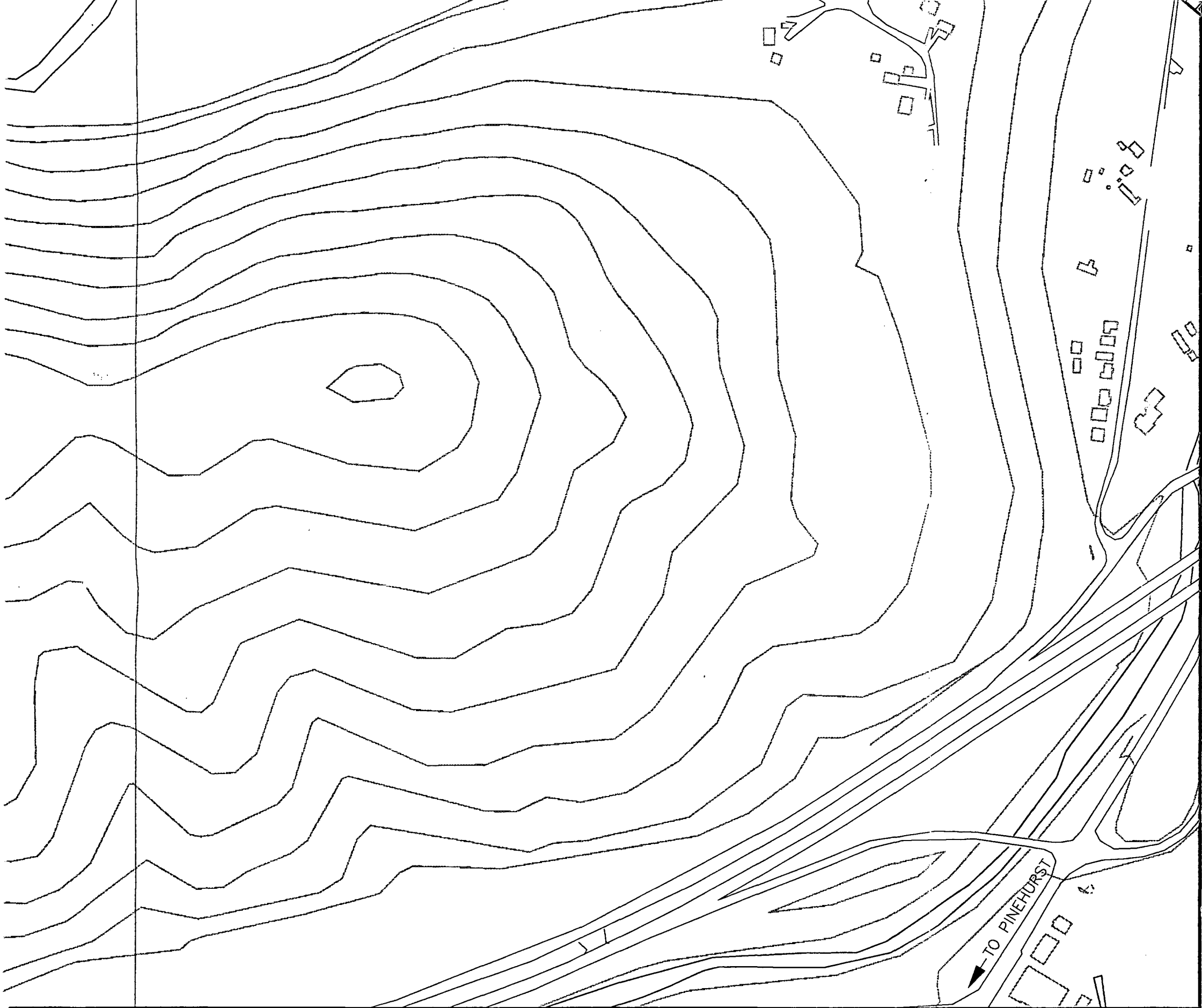


**UNION PACIFIC AREA**

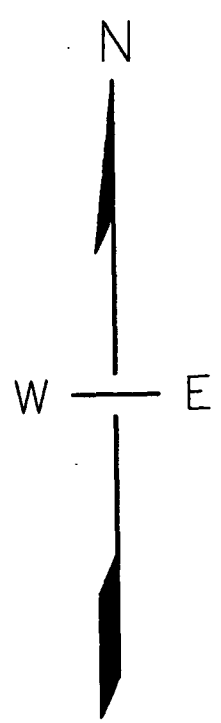
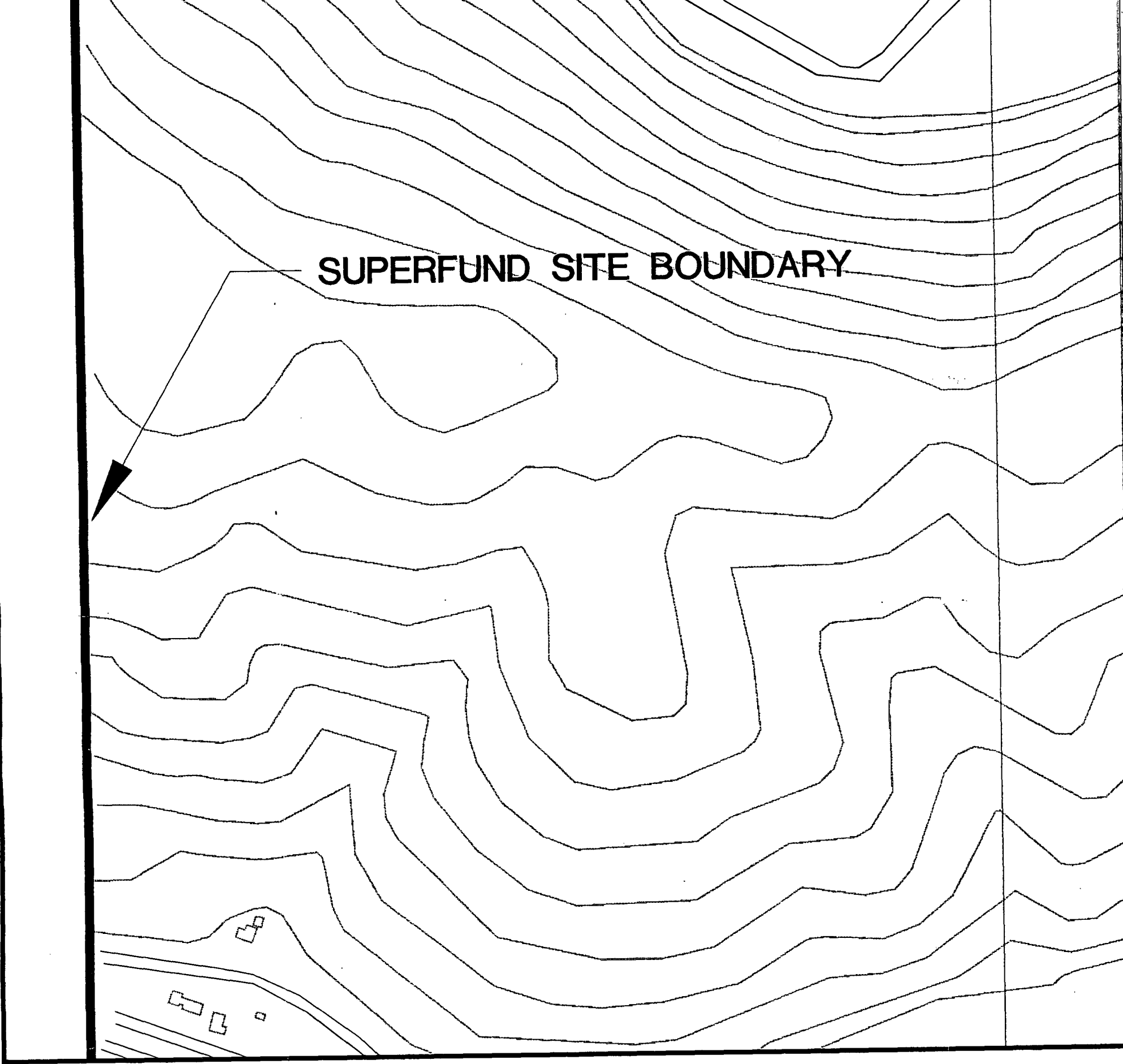
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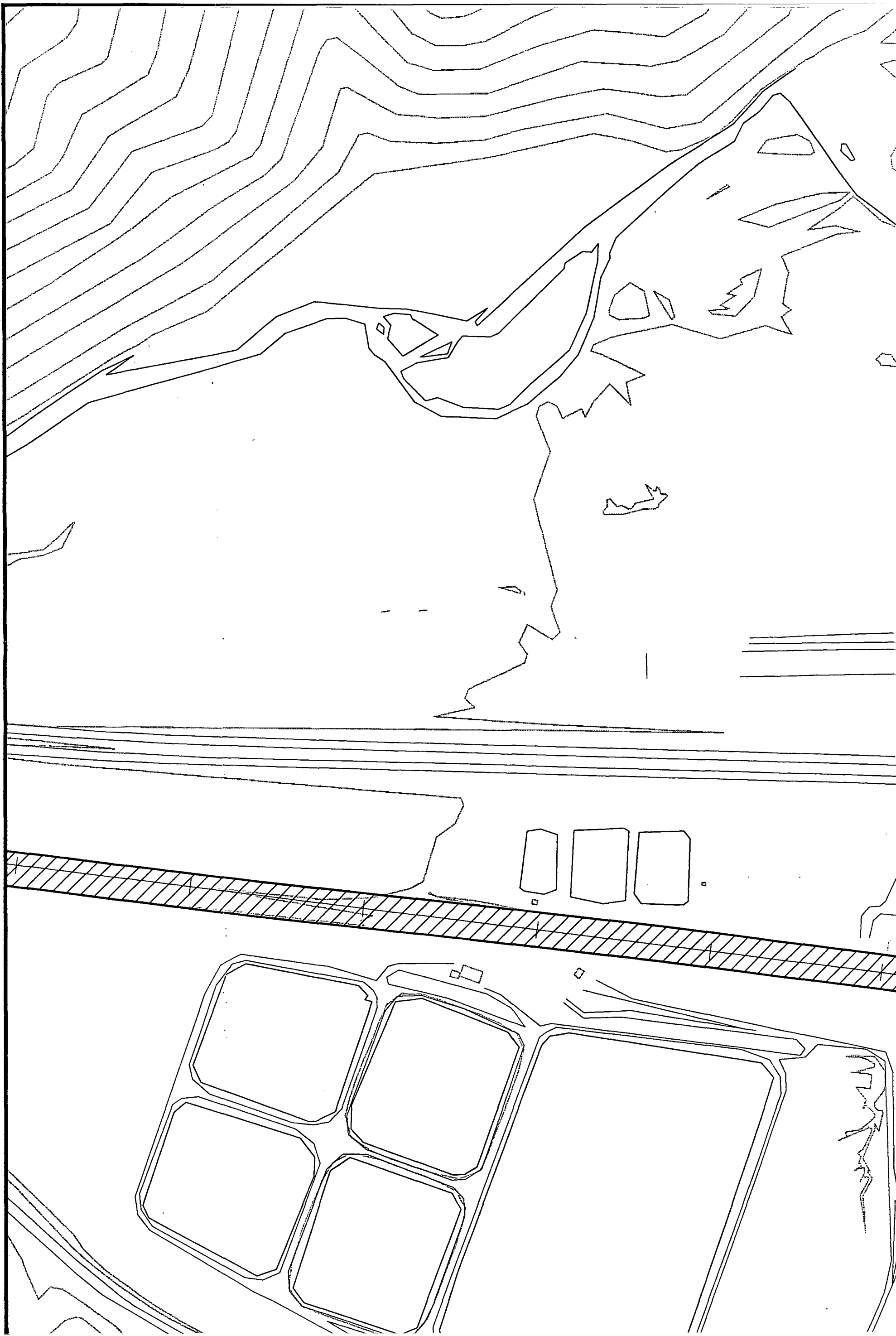


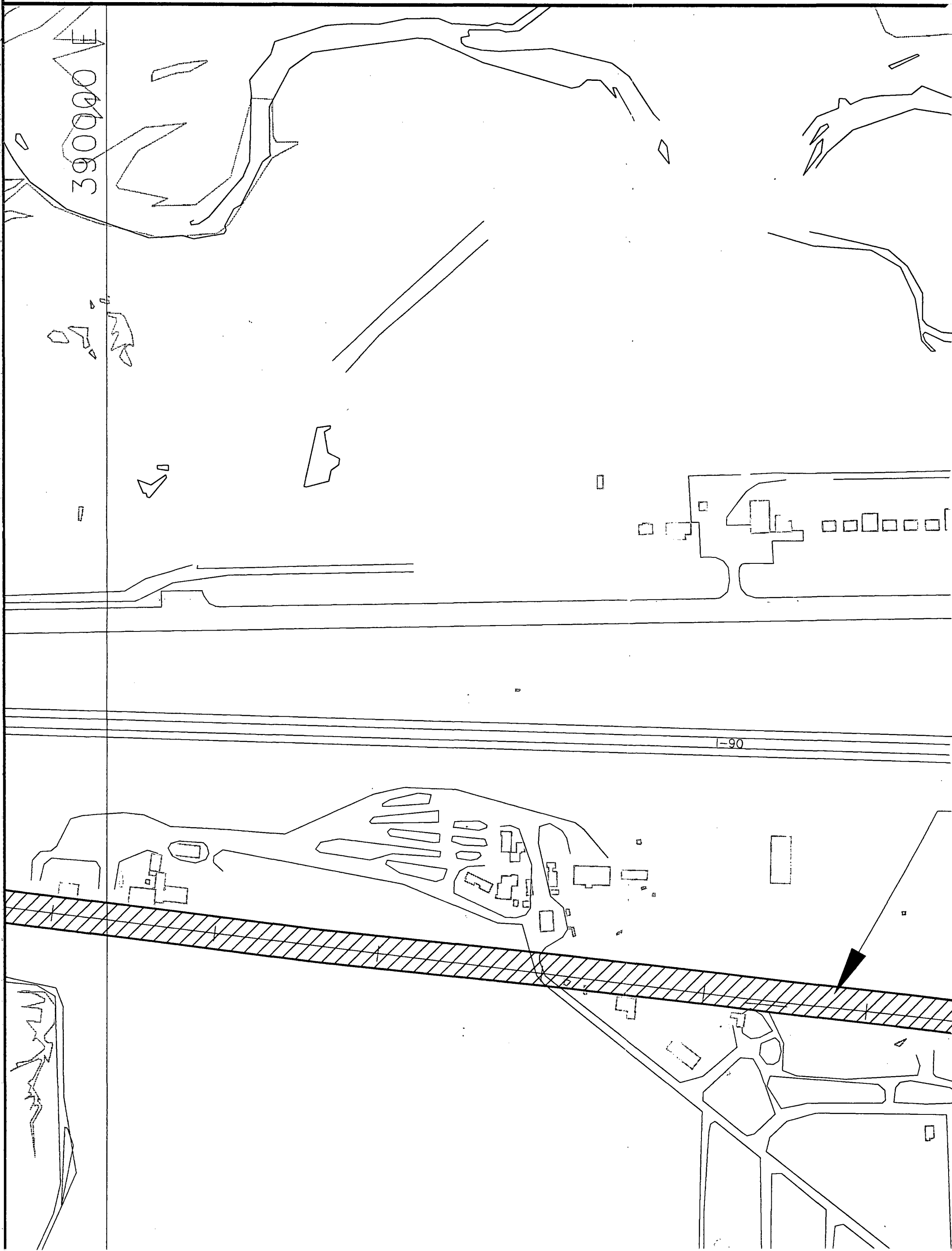
KEY MAP

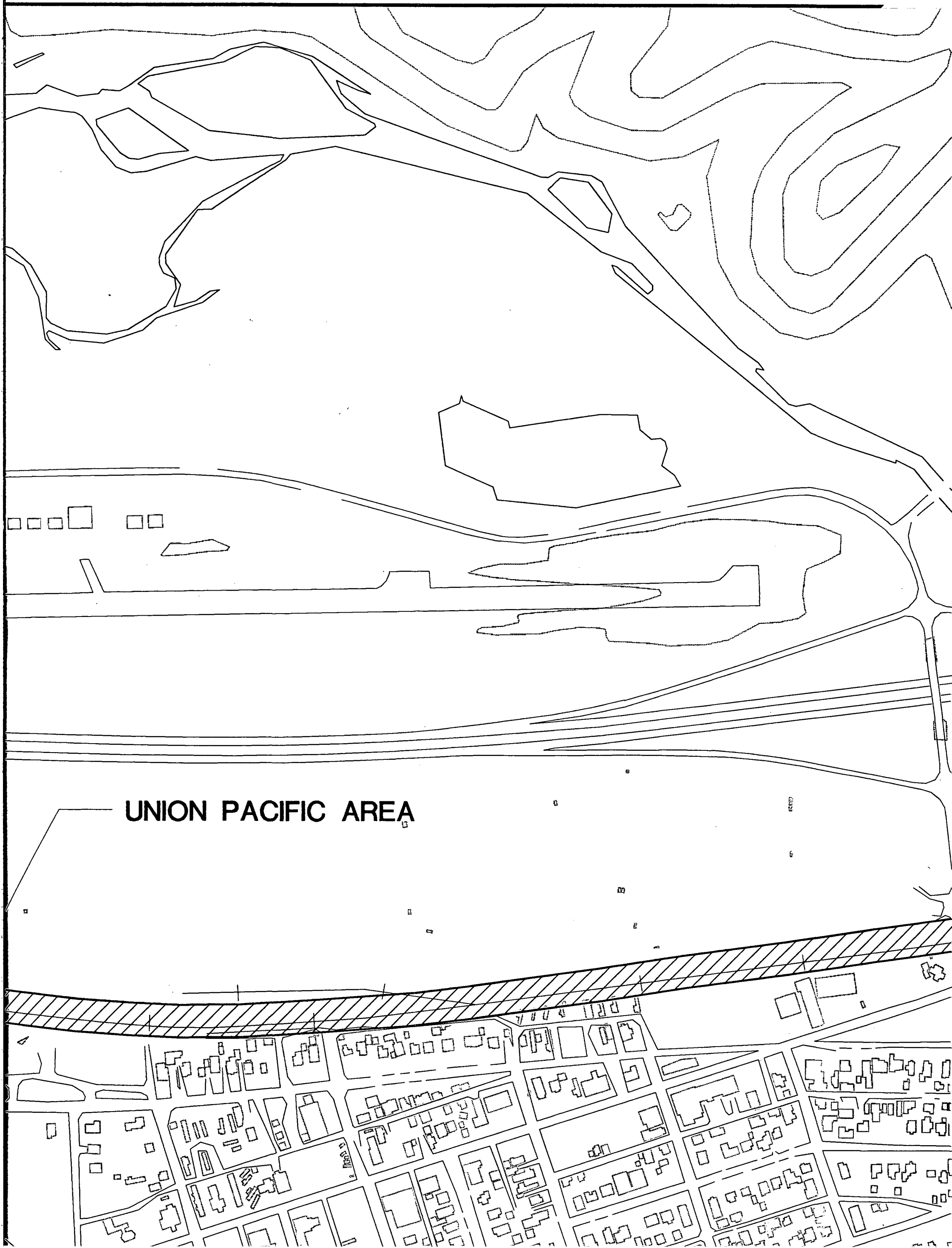


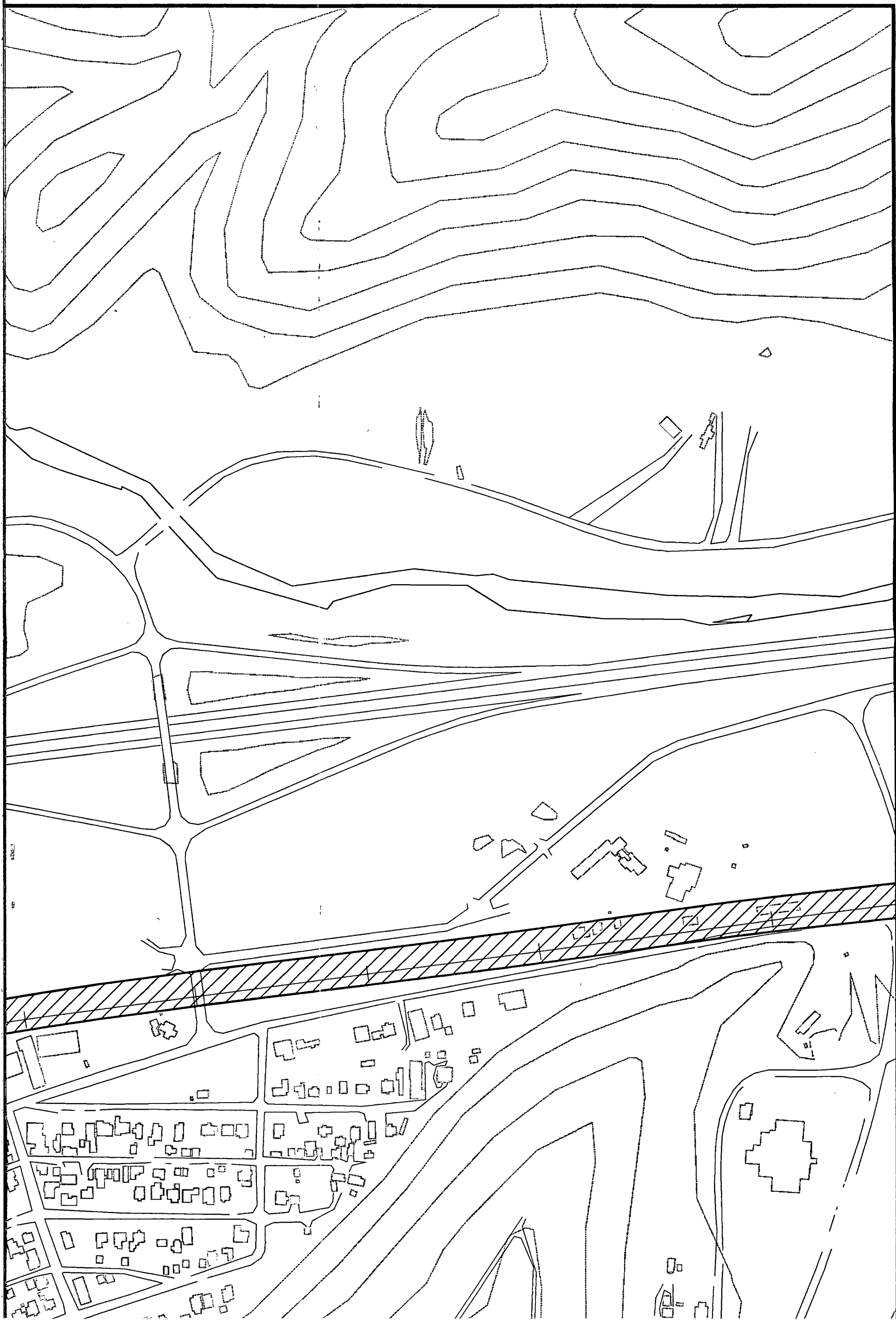
SCALE: 1" = 250 FEET

2 of 4

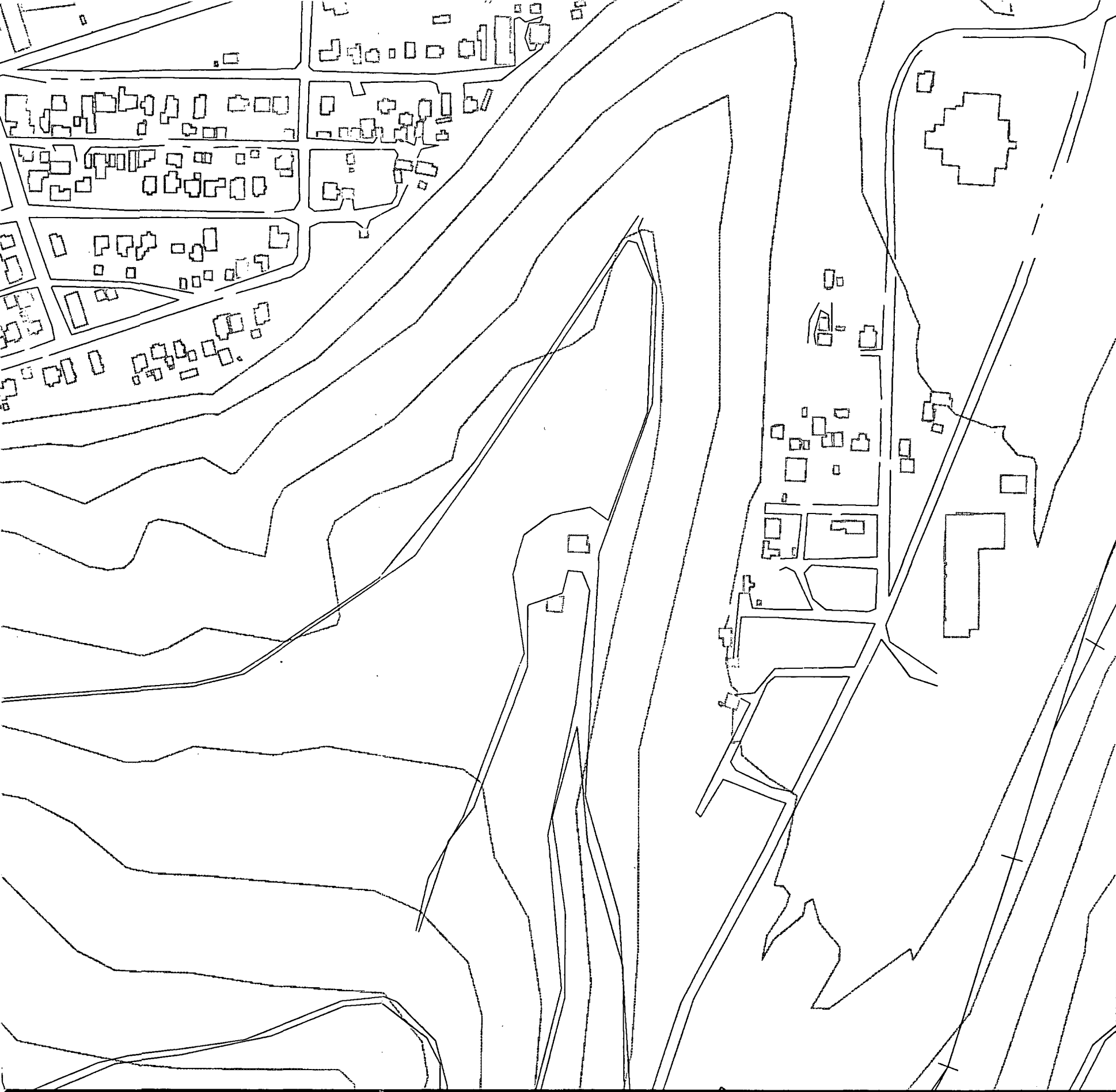












# BUNKER HILL SUPERFUND SITE ALLOCATION MAP

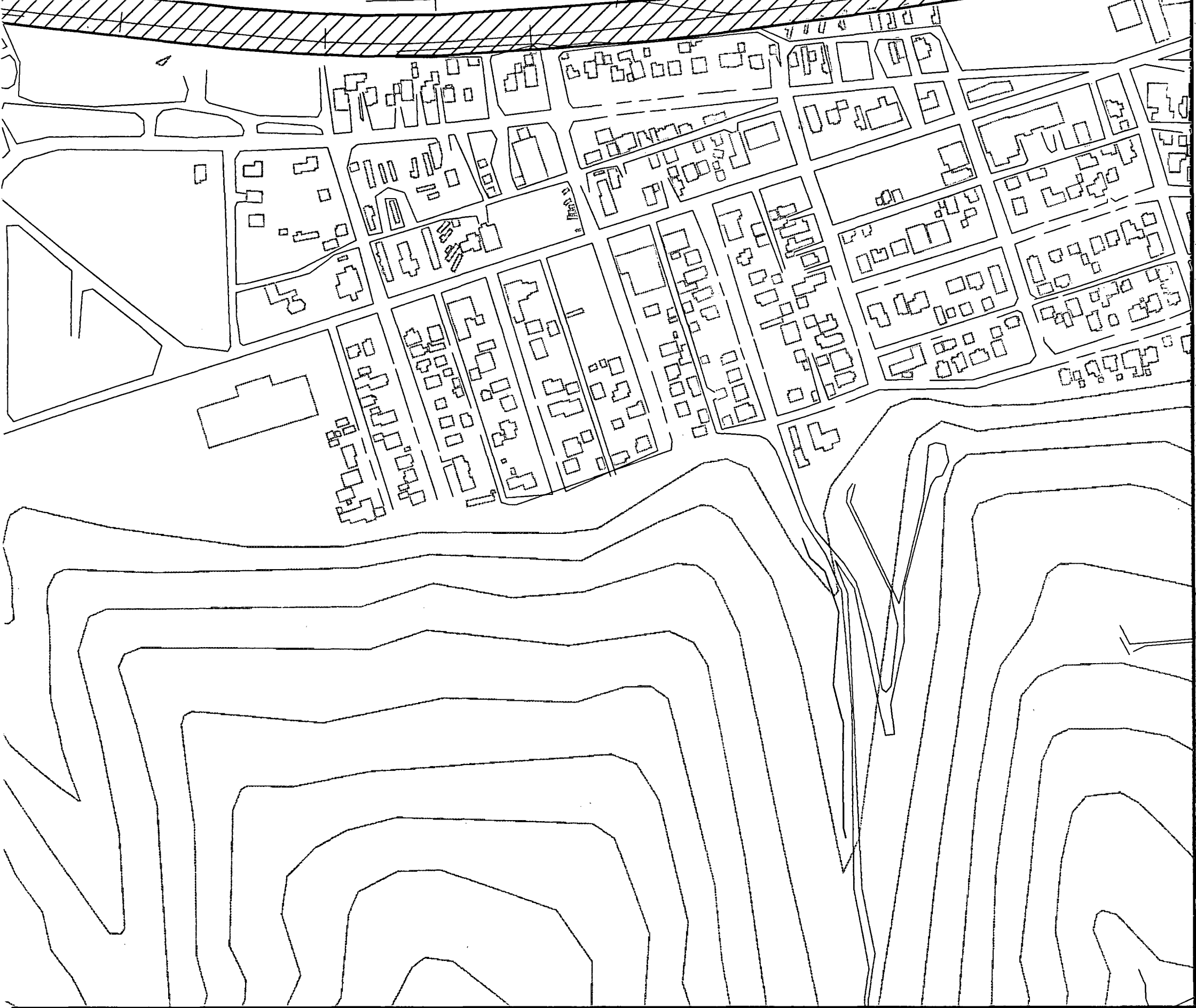
DECEMBER 15, 1994

ATTACHMENT D-2 of 4

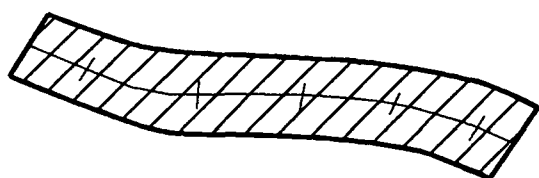
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and 18, June  
.location Map  
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BHSF 13.13.40-1  
164621



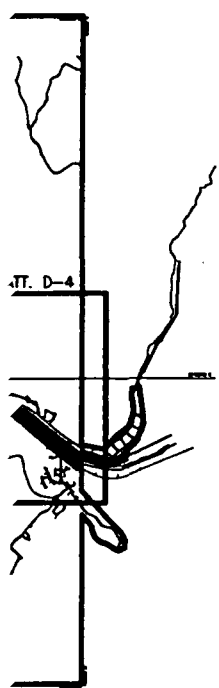
## LEGEND

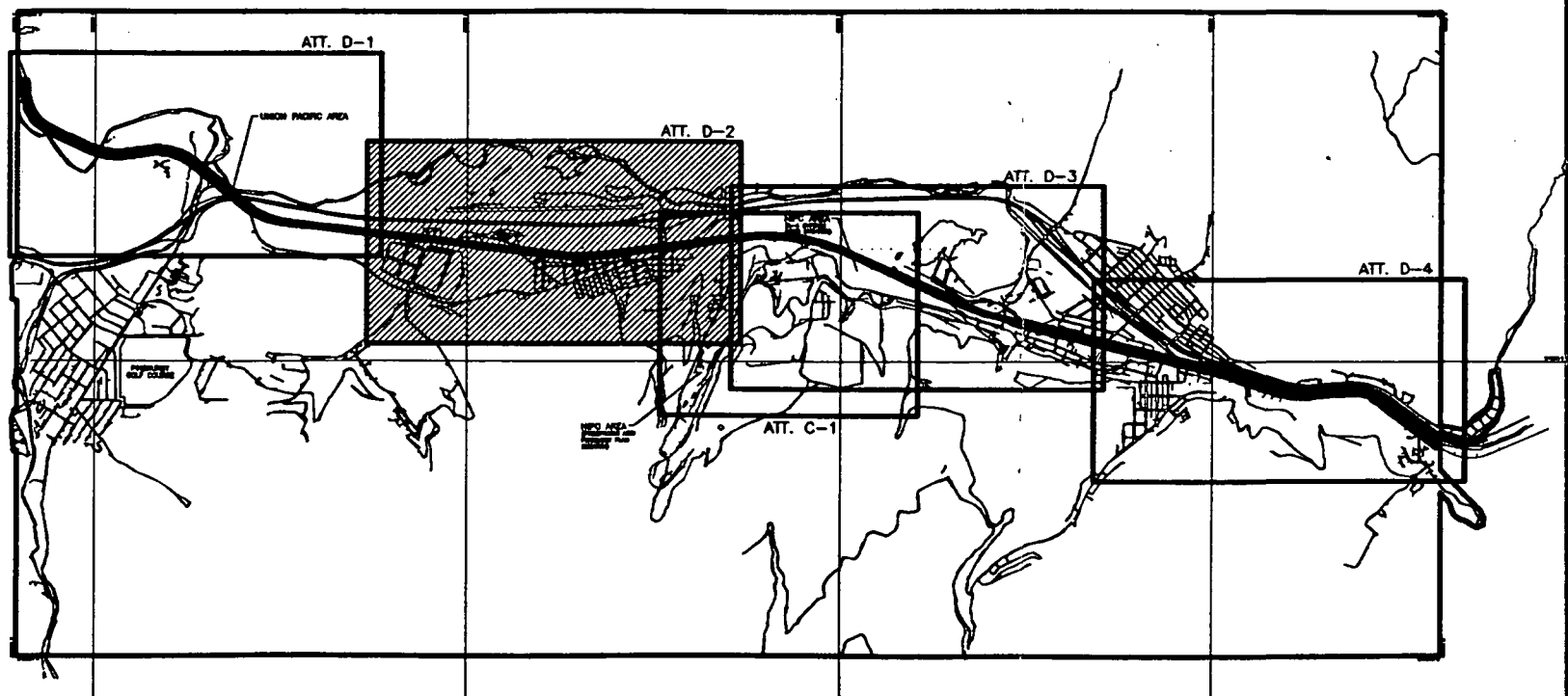


**UNION PACIFIC AREA**

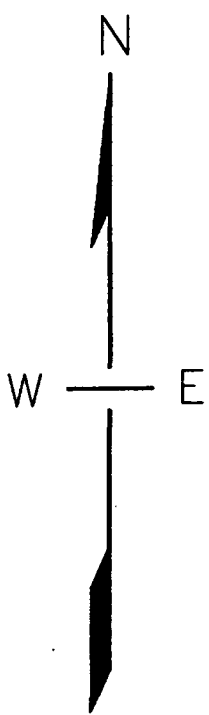
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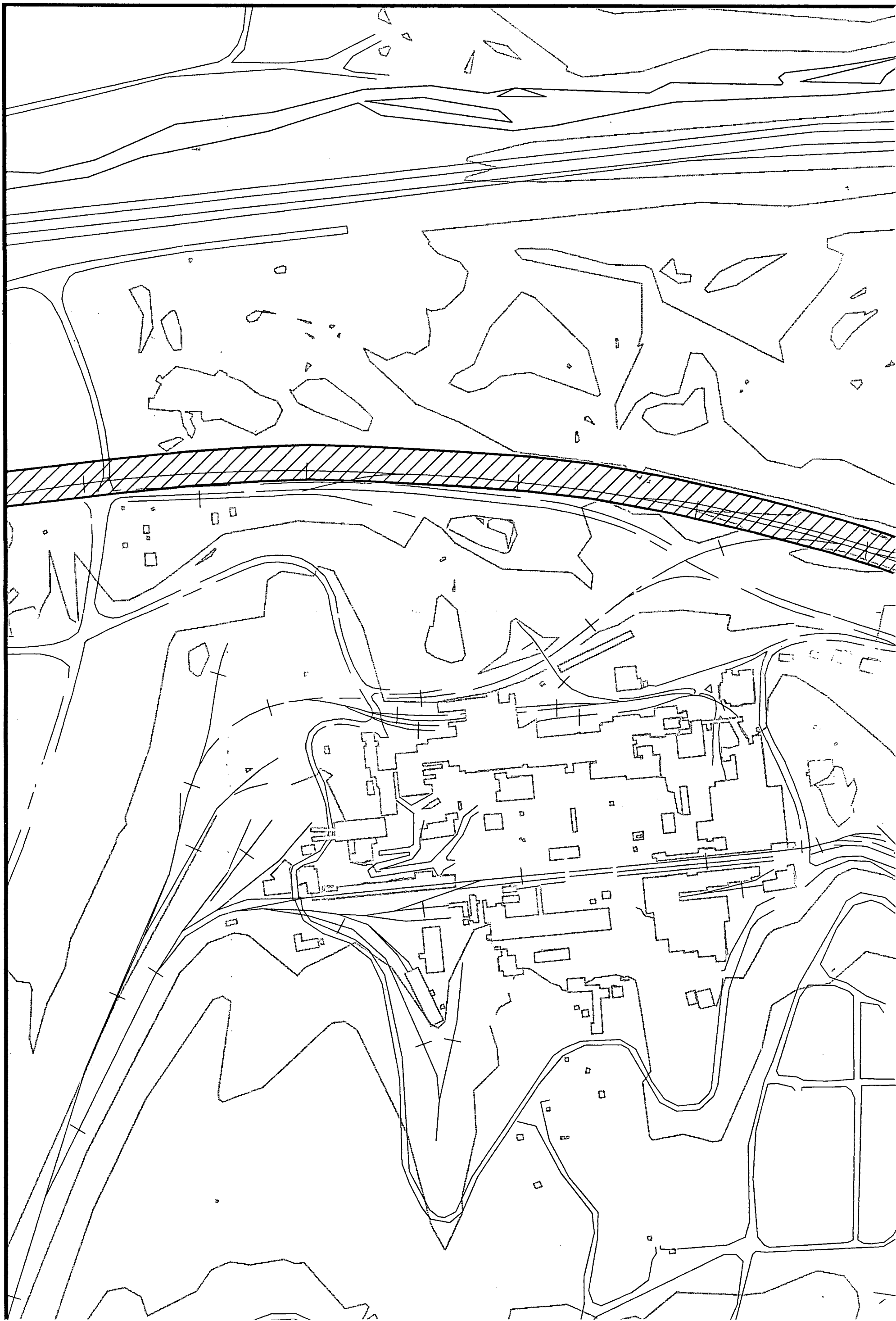


KEY MAP



SCALE: 1" = 250 FEET

3 of 4

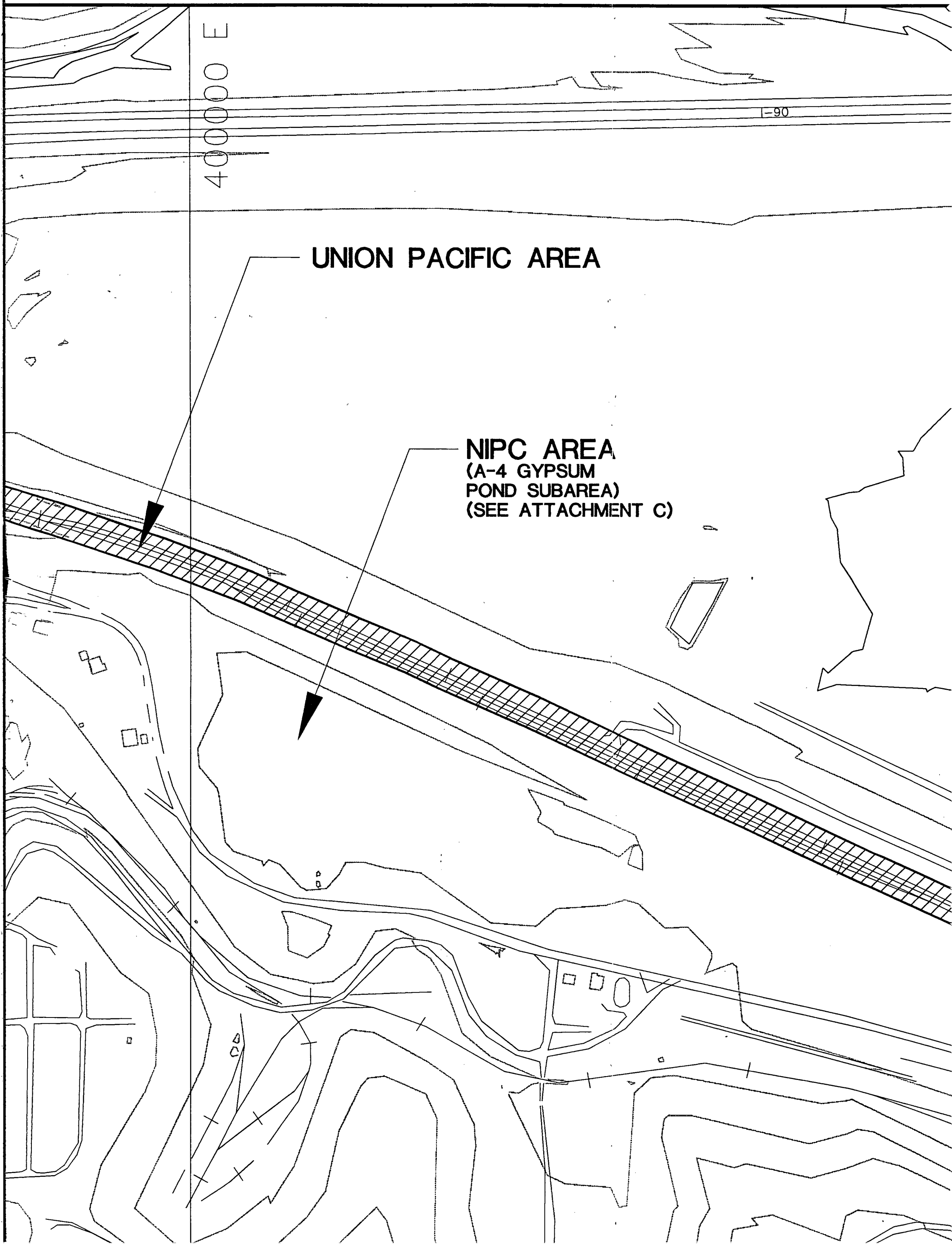


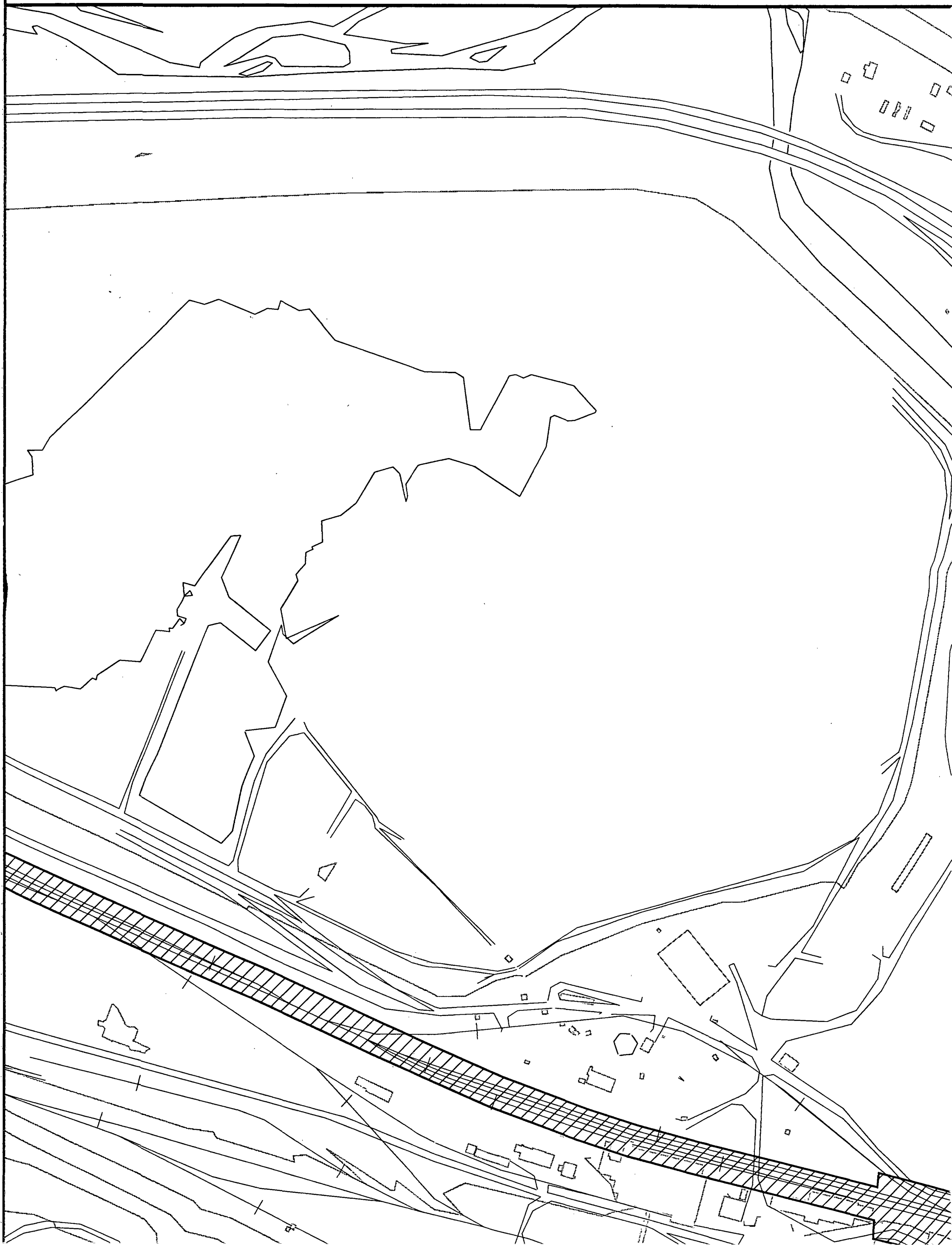
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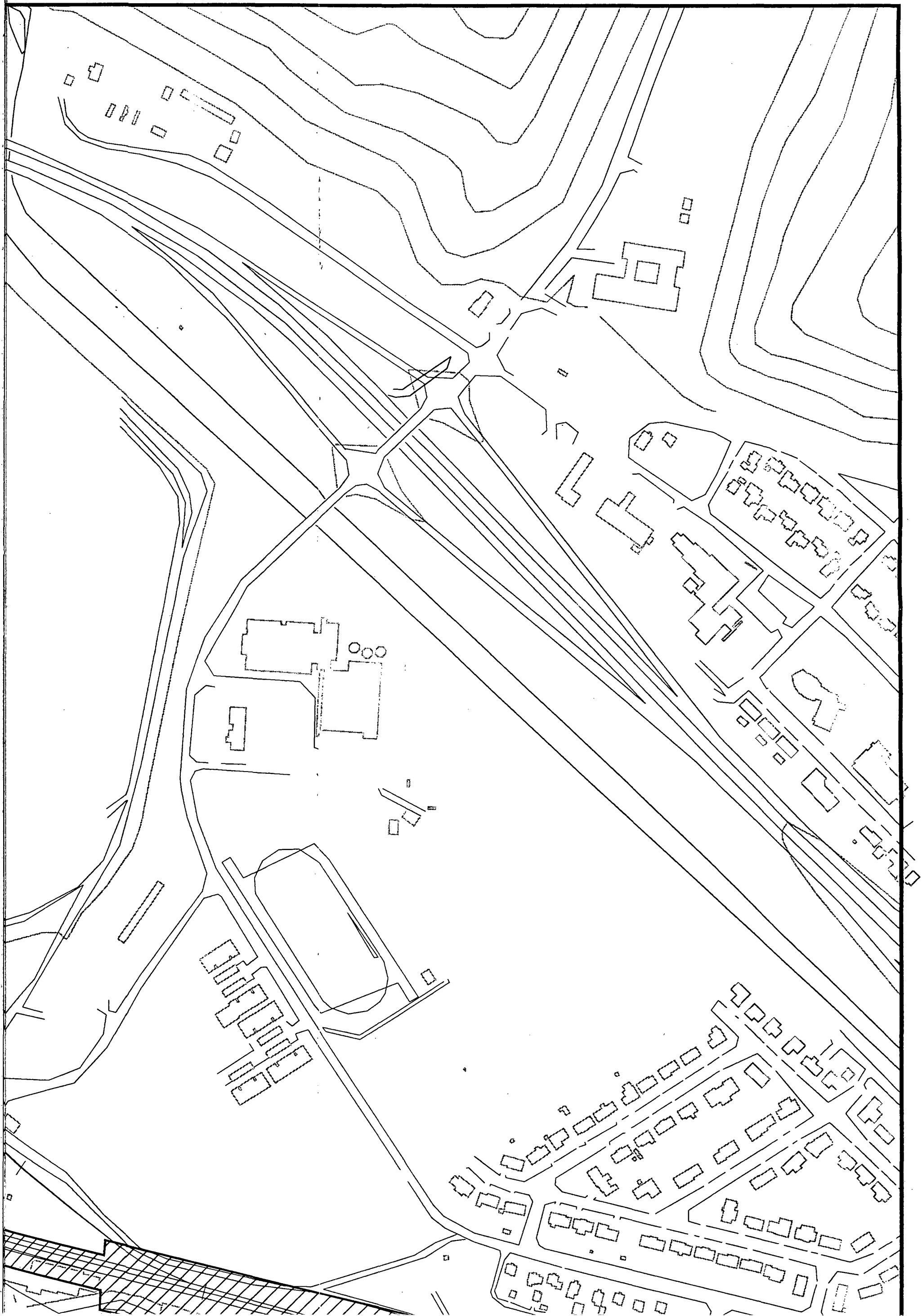
UNION PACIFIC AREA

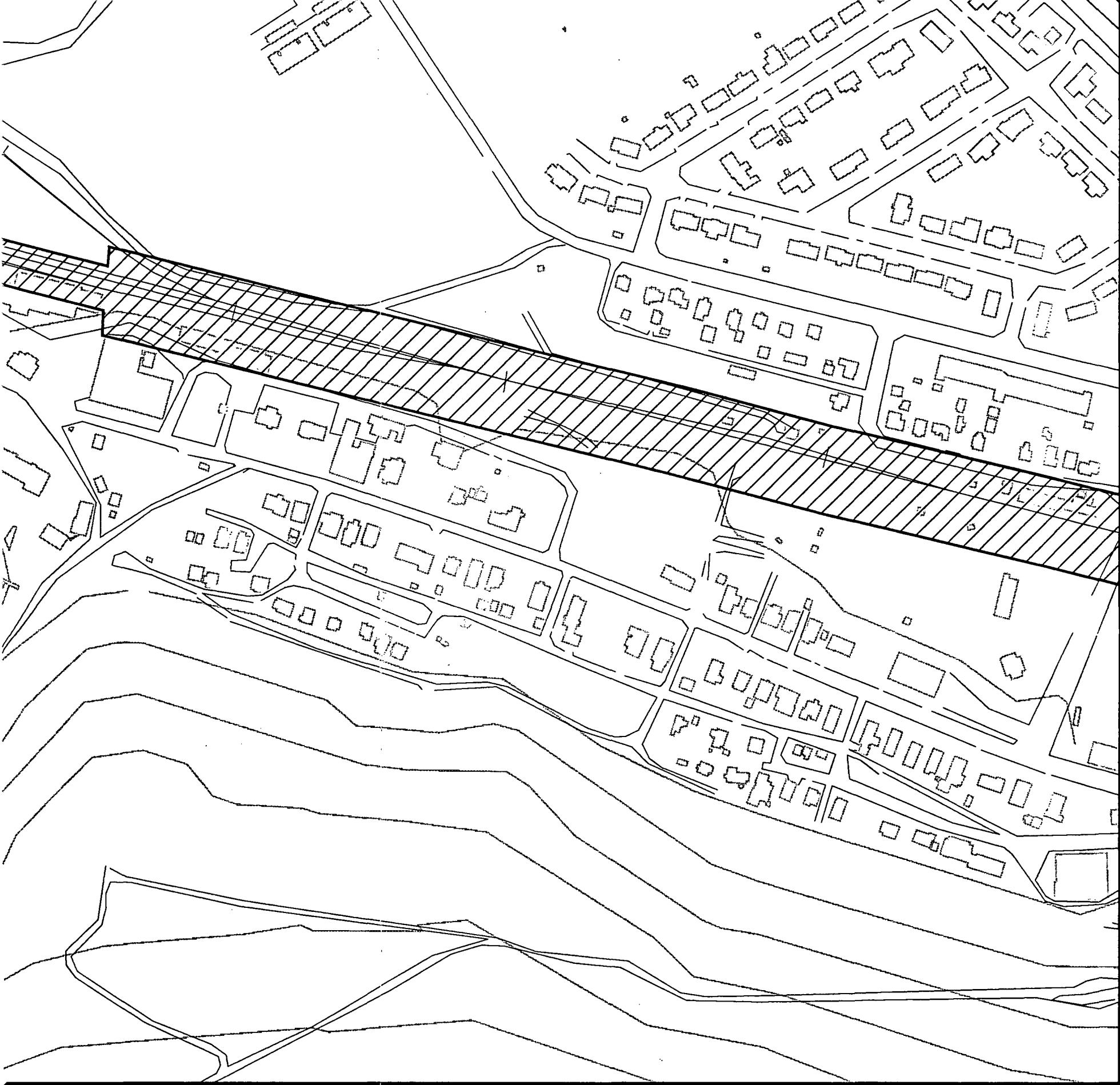
NIPC AREA  
(A-4 GYPSUM  
POND SUBAREA)  
(SEE ATTACHMENT C)











# BUNKER HILL SUPERFUND SITE ALLOCATION MAP

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information obtained  
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this Allocation Map  
shall govern.

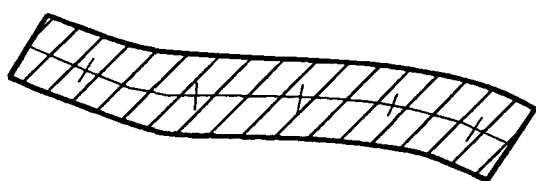
DECEMBER 15, 1994

ATTACHMENT D-3 of 4

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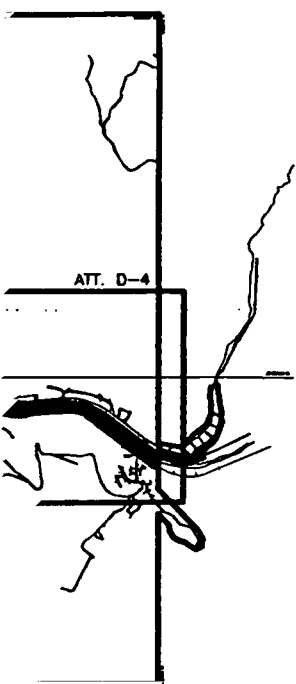
## LEGEND

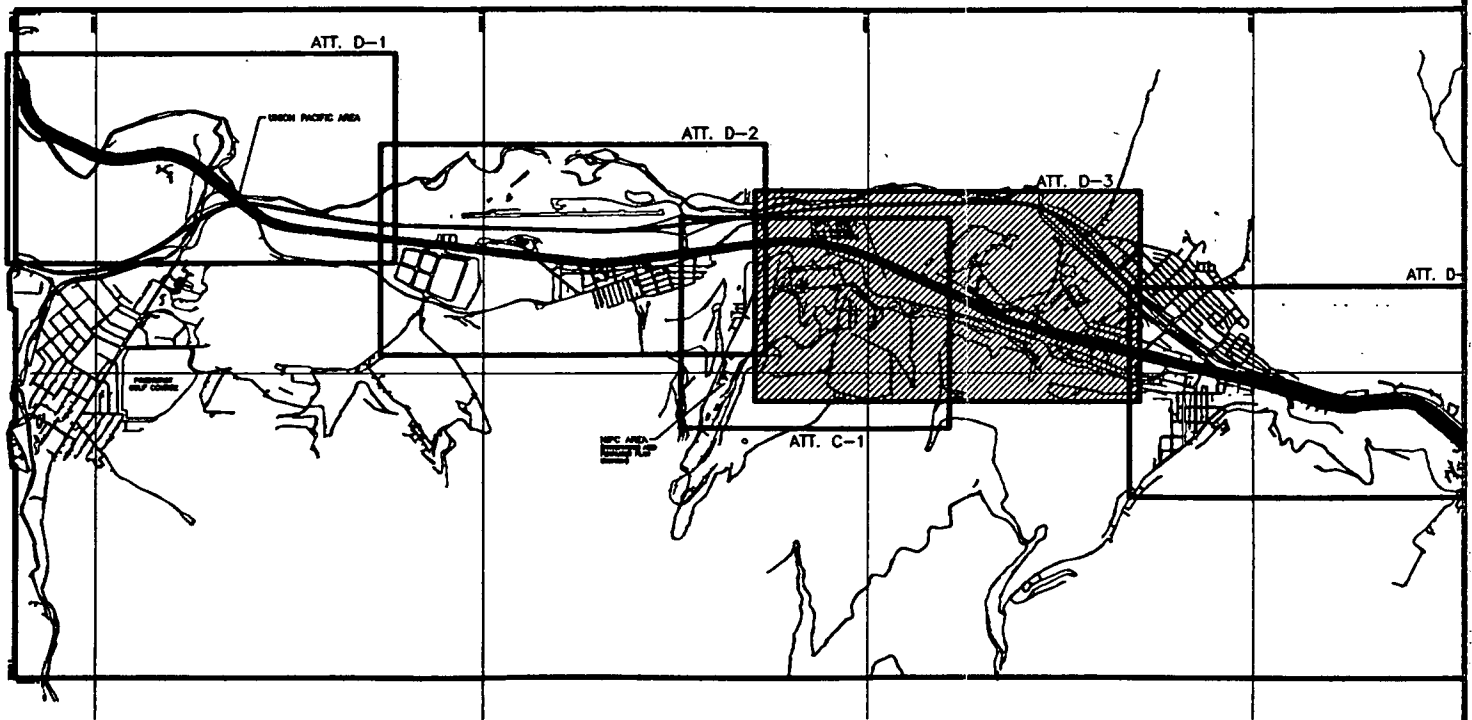


**UNION PACIFIC AREA**

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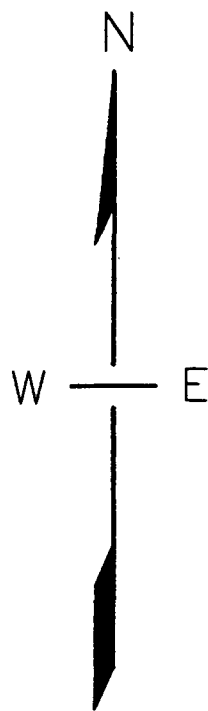
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KEY MAP



SCALE: 1" = 250 FEET

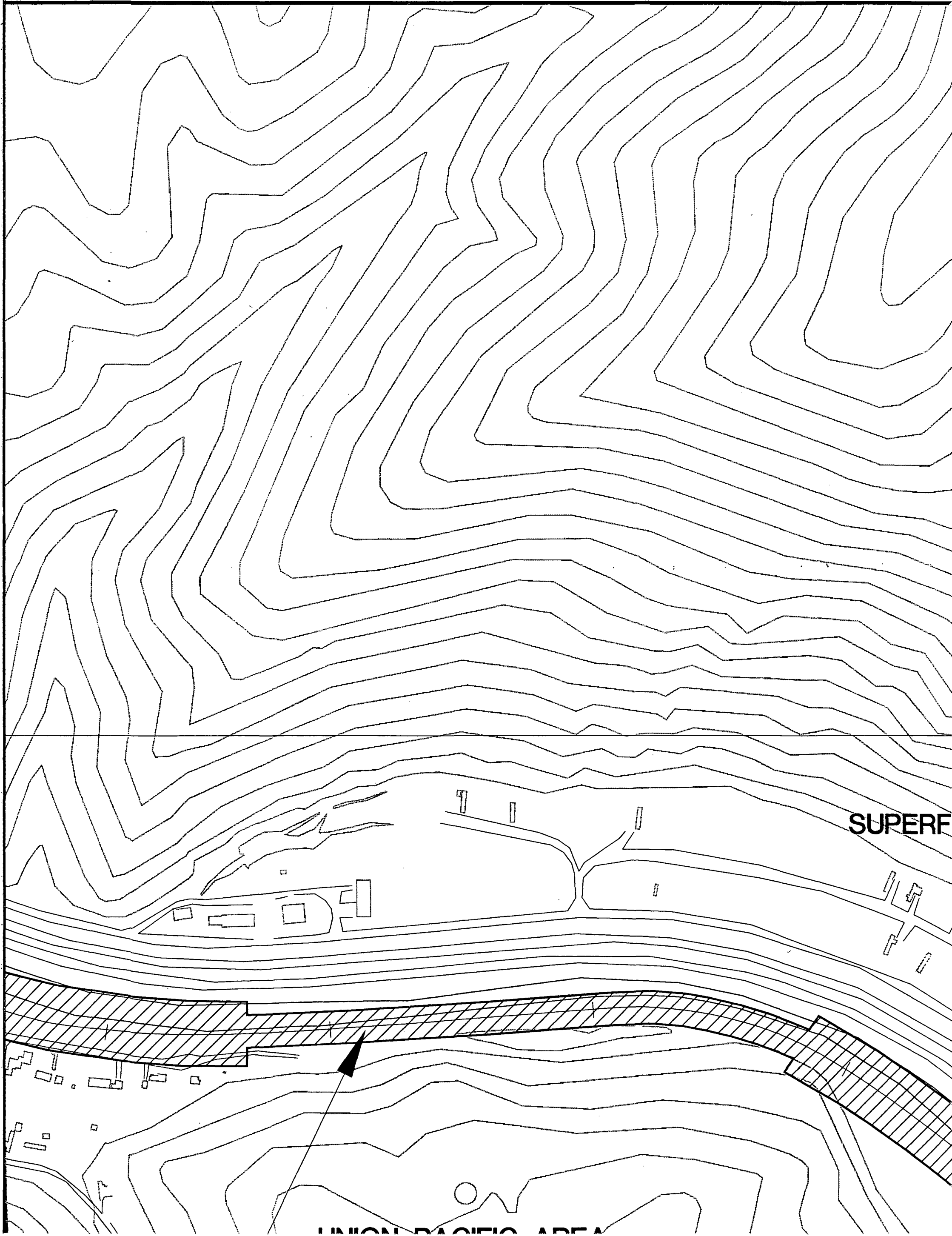
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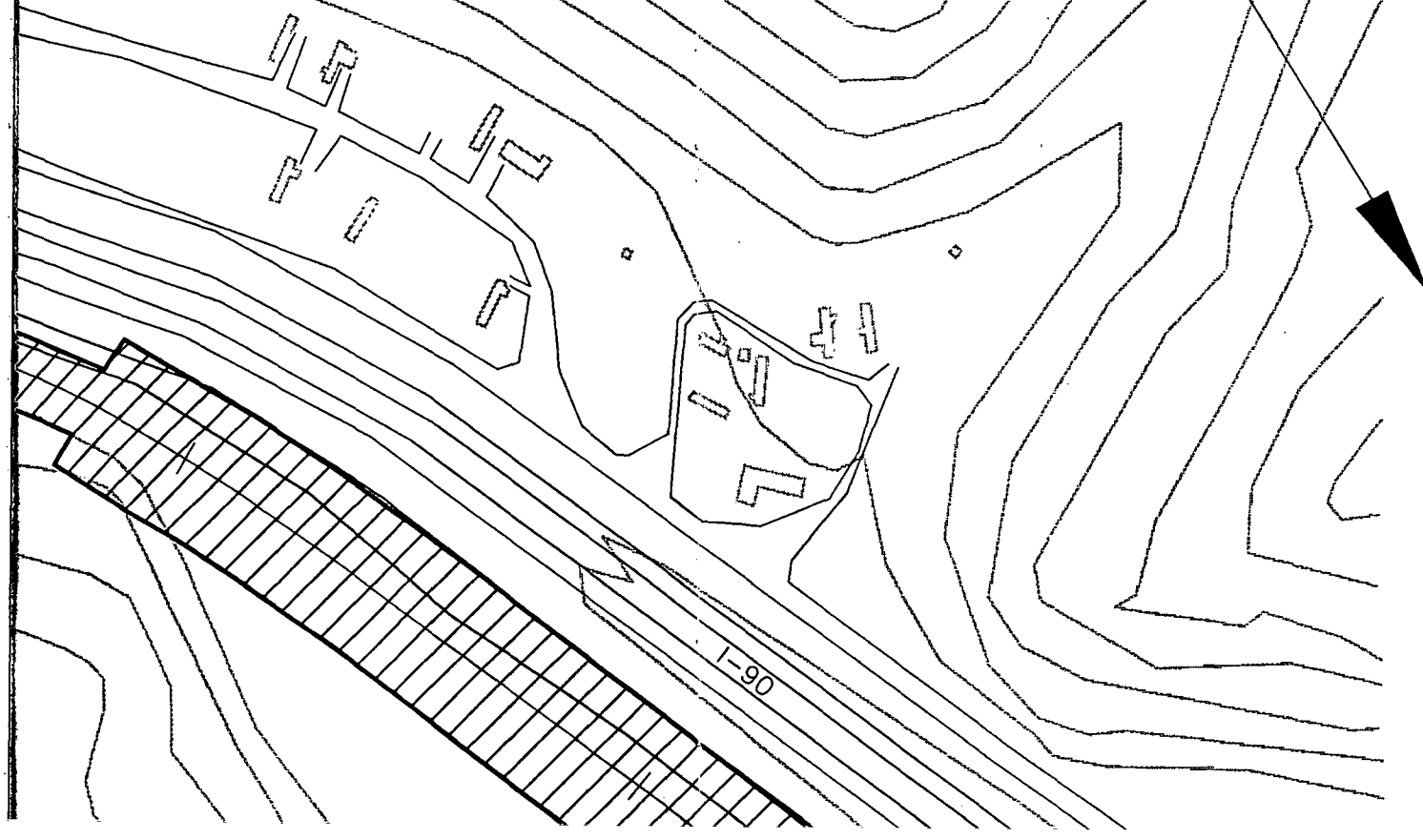


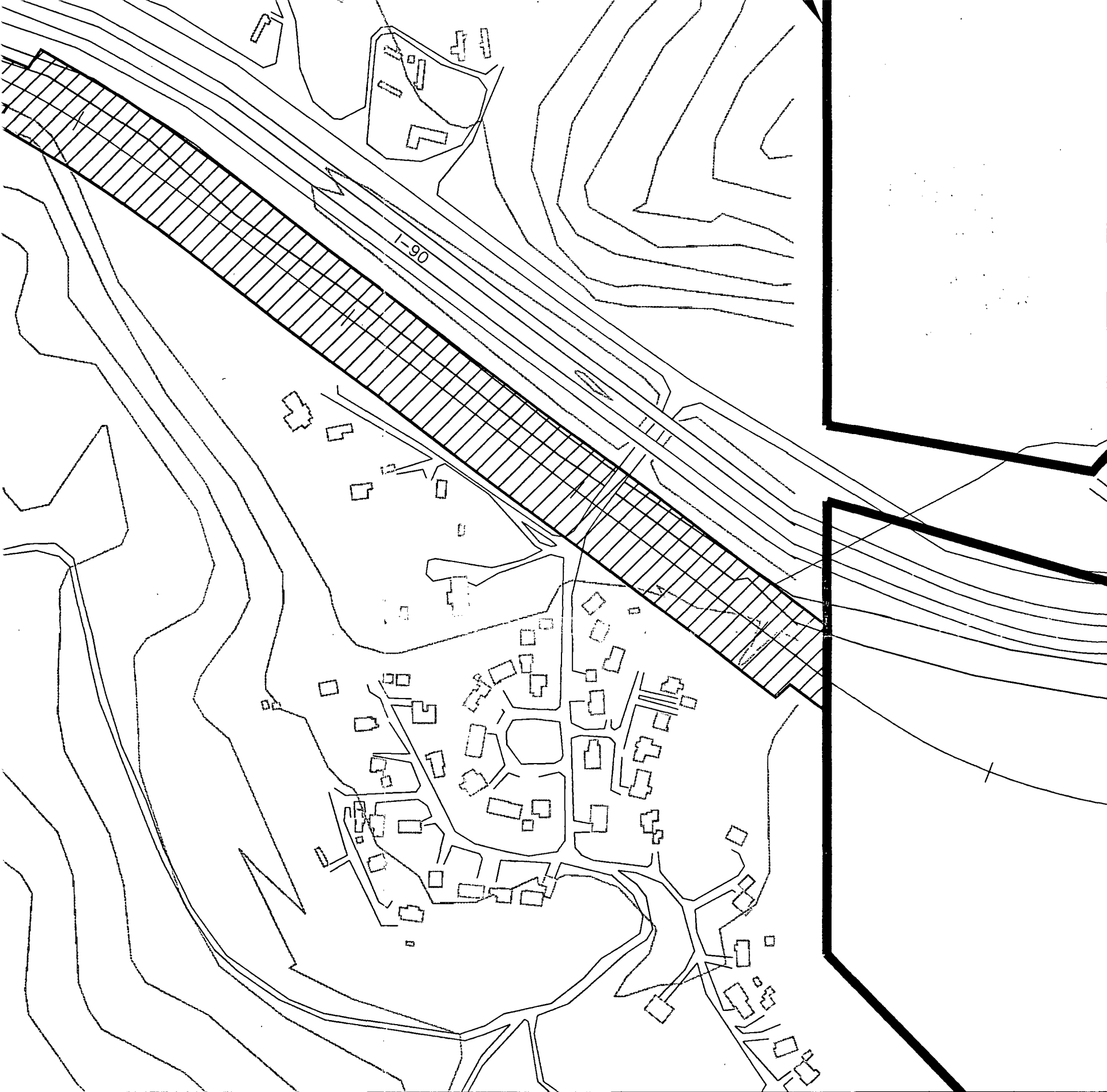


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**SUPERFUND SITE BOUNDARY**





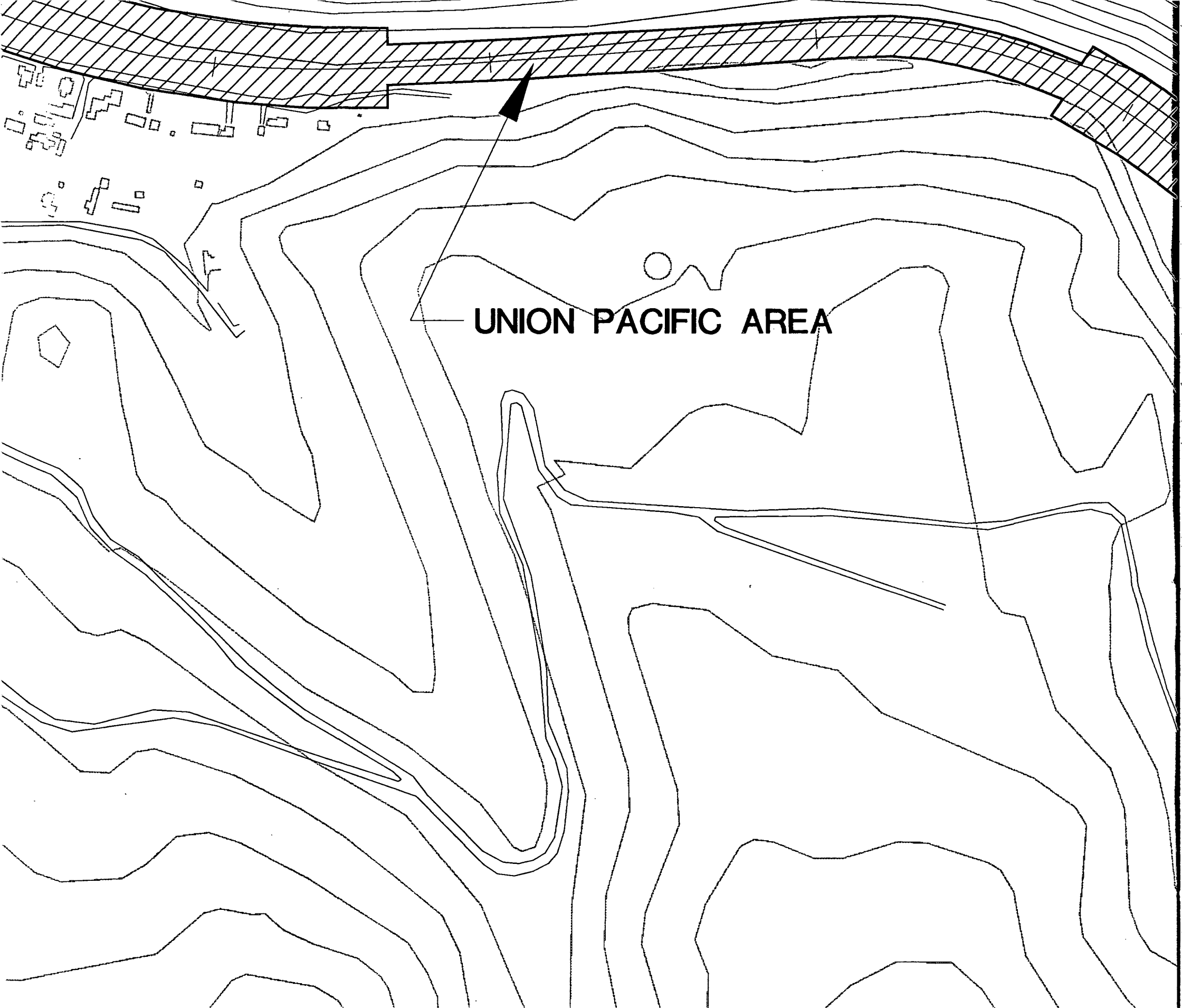
# BUNKER HILL SUPERFUND SITE ALLOCATION MAP

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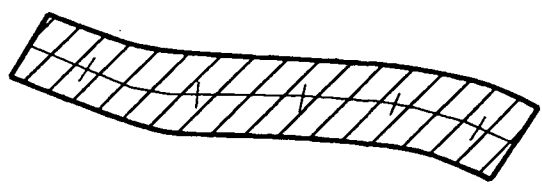
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ATTACHMENT D-4 of 4

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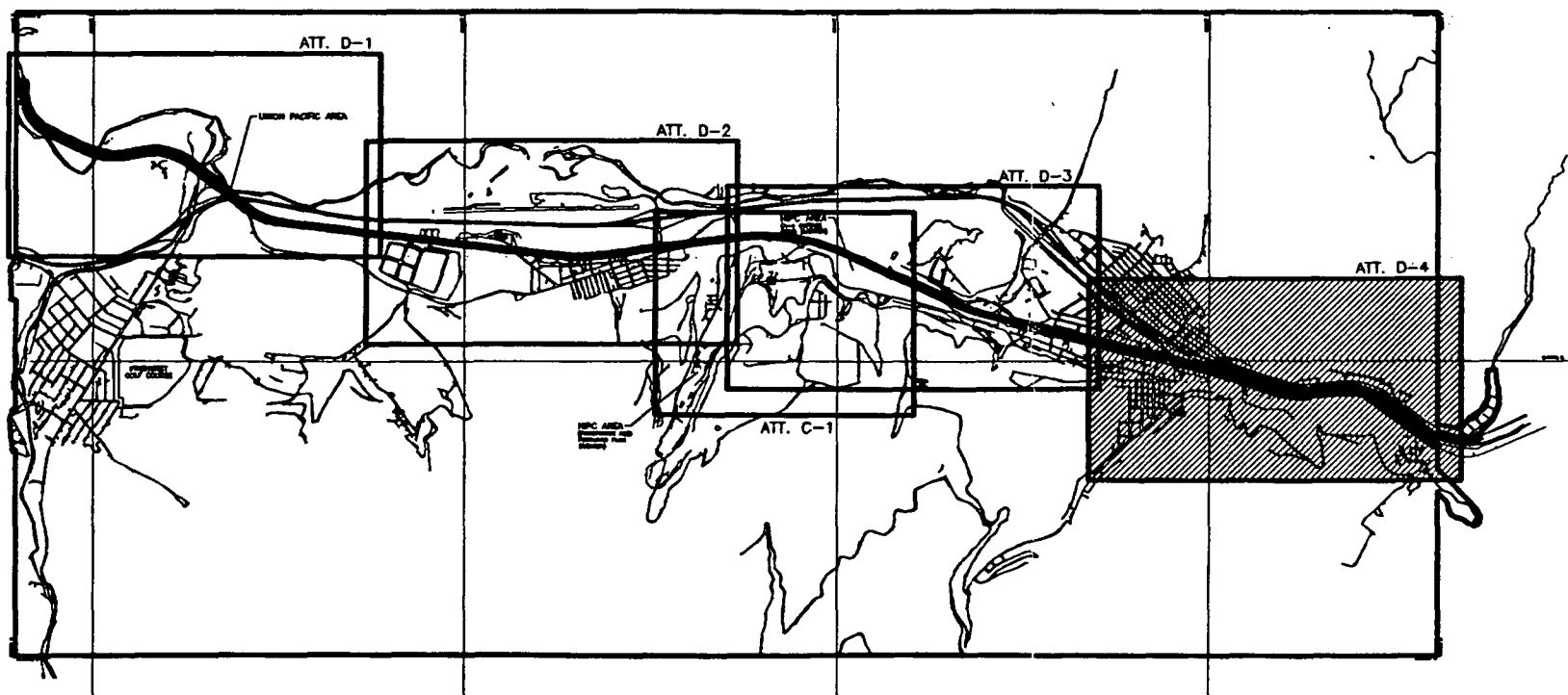
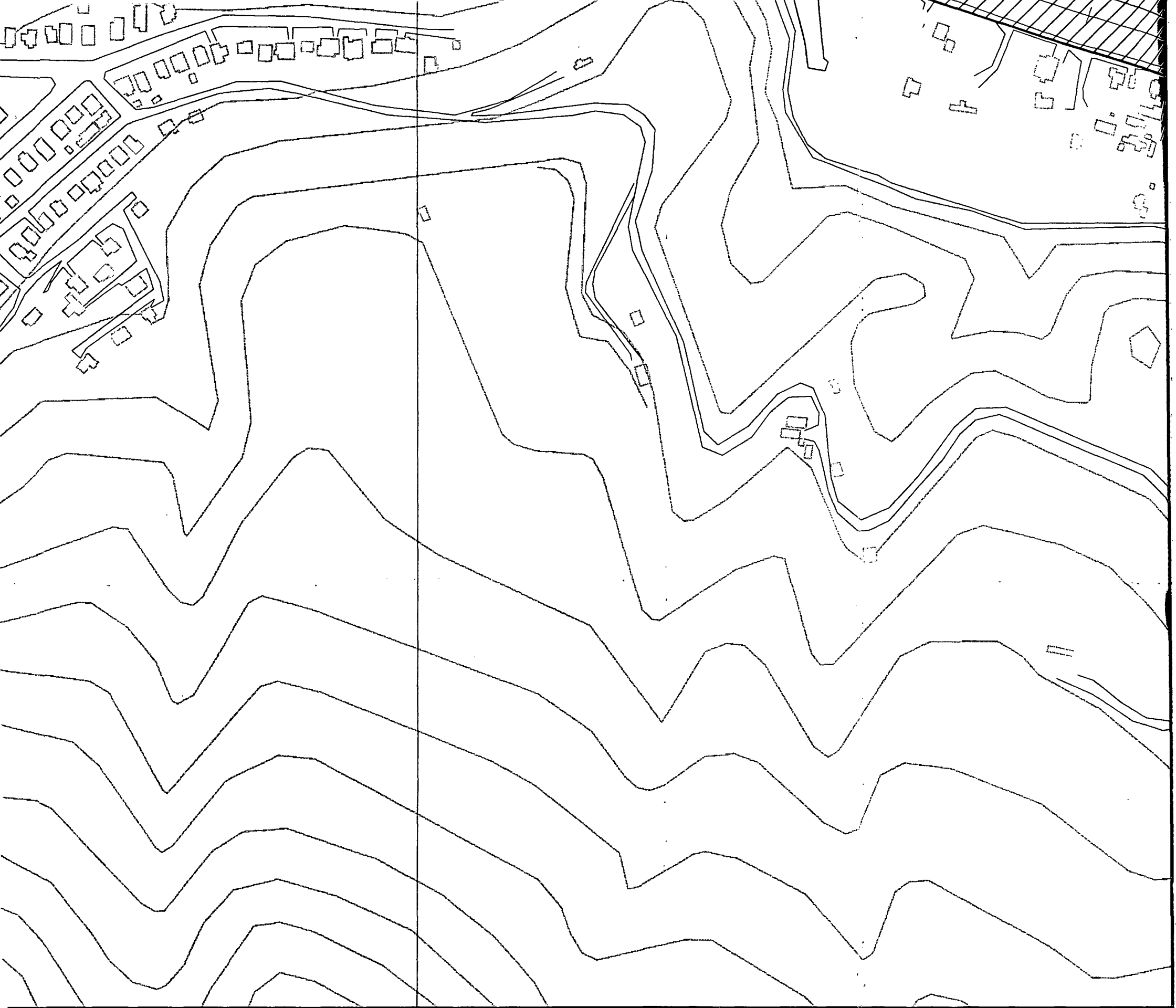
## LEGEND



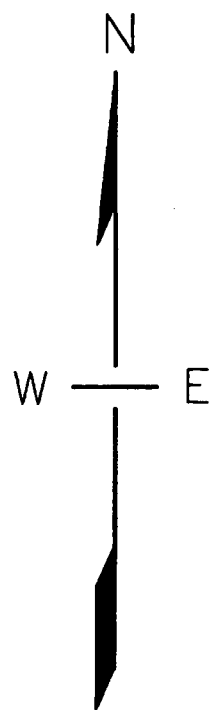
**UNION PACIFIC AREA**

**NOTE:** The boundary of the Union Pacific Area as set forth on this attachment includes those areas in which the UPRR has a property interest and which: 1) are contiguous to the UPRR Wallace Branch main line; and 2) which have been clearly used by UPRR as a right-of-way, as indicated by the presence of the track or ballast.

The railroad right-of-way shown on this Allocation Map is based on information obtained from the Right-of-Way and Track Map, Oregon-Washington Railroad and Navigation Company, Branch Line - Tekoa to Wallace, Drawing Idaho-3, Sheets 16, 17 and 18, June 30, 1916 (Revised December 31, 1927). If discrepancies exist between this Allocation Map and the Right-of-Way and Track Map, the latest revision of the latter shall govern.



KEY MAP



SCALE: 1" = 250 FEET

***Attachment E***

***Stauffer Entities SOW***

Attachment E

A-4 GYPSUM POND SUBAREA  
BUNKER HILL  
REMEDIAL DESIGN and REMEDIAL ACTION  
STATEMENT OF WORK

December 1994



A-4 GYPSUM POND SUBAREA  
BUNKER HILL  
REMEDIAL DESIGN and REMEDIAL ACTION  
STATEMENT OF WORK

1.0 INTRODUCTION, DEFINITIONS, AND GENERAL PROVISIONS

1.1 Introduction

This Statement of Work ("SOW") is one of two detailing the on-site activities to be undertaken by the Settling Defendants in compliance with the requirements of this Consent Decree. This SOW address only that portion of work for which Stauffer Management Company and Rhone-Poulenc, Inc. (the "Stauffer Entities") are responsible. The area of Work for which the Stauffer Entities are responsible (the "Area") is delineated on the Bunker Hill Superfund Site Allocation Map (Allocation Map), Attachment C to the Consent Decree. The Work shall be consistent with the decisions set forth in the Bunker Hill 1991 Record of Decision and the Bunker Hill 1992 Record of Decision (collectively the "RODs") attached as Attachment A to the Consent Decree and performed pursuant to the Consent Decree.

The Work shall be structured to allow the most expeditious implementation of actions in a coordinated sequence that integrates remediation goals and minimizes short-term impacts and disruptions to the affected communities. The Work shall be organized as described below. The Work is further described in the Draft Gypsum Pond A-4 Closure Remedial Design Report (RDR), which is attached to the Consent Decree as Attachment G.

1.2 Definitions

Terms used in this SOW are as defined below or, when not defined herein, by this Consent Decree, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP).

1.2.1 "Clean Soil" shall contain mean concentrations less than 100 ppm lead, 100 ppm arsenic and 5 ppm cadmium. No single sample shall exceed 150 ppm lead.

1.3 General Provisions

1.3.1 The Work activities and related operation and maintenance requirements associated with this SOW are final remedial actions. Remedial actions outlined in this SOW shall meet Performance Standards.

1.3.2 The Stauffer Entities will begin performance of the Work as described in Section 5.0 of this document. The Stauffer Entities will not, however, be required to commence construction or sampling until this Consent Decree has been entered by the Court.

1.3.3 The Work, or any portion of the Work shall be integrated and coordinated in a manner consistent with all other Work under this Consent Decree, and with all operations and/or tasks undertaken by others, including, but not limited to, emergency response activities.

1.3.4 Any repairs required to community infrastructure, such as roads and utilities, due to the implementation of the Work, shall be performed in a timely manner to ensure minimum disruption to the community.

- 1.3.5 Whenever the Stauffer Entities are obligated to perform an activity under this SOW, they may perform the activity themselves or engage a contractor (or contractors) accepted by EPA, unless other arrangements are mutually agreed upon, in fulfillment of their obligation.
- 1.3.6 During remedial construction activities, dust control measures shall be implemented to control the transport of contaminated material. Dust control activities shall include, but not be limited to, engineering and construction practices, the use of water to wet down areas or polymeric, chemical or physical surface sealers for temporary dust control.
- 1.3.7 Appropriate controls shall be used to prevent exposures to hazardous substances during performance of the Work. Access controls shall include, but not be limited to, fencing and signs. Access control shall be maintained in all areas where it currently exists.
- 1.3.8 Appropriate controls shall also be applied, as necessary, to restrict access to potential source areas, to control transport of contaminants and to control exposures to contaminants of concern during construction activities.
- 1.3.9 Best Management Practices shall be employed during remedial actions and the practice of not scheduling Work activities during periods of high storm water runoff shall be continued.
- 1.3.10 The objective of routine site maintenance is to ensure that facilities and control measures in the Area continue to be effective and achieve Performance Standards over the long term.
- 1.3.11 Work performed shall minimize operation and maintenance (O&M) requirements. A comprehensive post-closure O&M program will be defined during Remedial Action through preparation of a post-closure O&M Plan.
- 1.3.12 In the event of any action or occurrence arising in connection with the performance of the Work which causes or threatens to cause a release from the Area that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, the Stauffer Entities shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the Project Coordinators for EPA and the State, or, if they are unavailable, their alternates. Where such a threat is identified, the Emergency Response provisions of the Consent Decree will apply.
- 1.3.13 The Stauffer Entities shall respond to conditions related to the Work identified by EPA as posing an immediate hazard (imminent and substantial threat) within 24 hours of notice and to less immediate hazards in a timely manner, unless otherwise provided in the Consent Decree.

## 2.0 DESCRIPTION OF WORK TO BE PERFORMED, PERFORMANCE STANDARDS AND OBJECTIVES

This Section sets forth the Stauffer Entities' portion of Work to be performed pursuant to this Consent Decree and states the Objectives and Performance Standards for the Work. This Work is to be conducted within the boundaries of the Area presented in the Allocation Map. The following Elements of Work are intended to provide a synopsis of the pertinent remedial actions that are explained in additional detail in the RODs. The Draft Gypsum Pond A-4 Closure Remedial Design Report, Attachment G to the Consent Decree, describes the Work in more detail.

A primary objective for remediation of the Area is the reduction or prevention of contaminant migration from the gypsum to groundwater, surface water and air. This objective shall be addressed through a series of remedial actions for the Area. The remedial actions described below comprise a comprehensive remedy consisting of a combination of containment, engineering and institutional controls.

### 2.1 Gypsum Pond A-4 Closure

The Gypsum Pond A-4 Closure Work is described in the Draft Gypsum Pond A-4 Closure RDR, including closure of the Gypsum Pond A-4 impoundment, conveyance of Magnet Gulch drainage across the Gypsum Pond A-4 Closure to Bunker Creek and conveyance of Deadwood Gulch drainage past the Gypsum Pond A-4 Closure to Bunker Creek.

The principal objective of remediation activities at Gypsum Pond A-4 is to reduce or eliminate contaminant migration from the gypsum in the Area to ground water, surface water and air. This objective will be achieved through the following remedial actions:

- removal of the upper portion of the existing Gypsum Pond A-4 embankment above the level of the existing surface of the impounded gypsum and regrading the downstream face of the embankment, to enhance the stability of the structure and reduce surface erosion;
- placement of a compacted layer of granular fill over the impounded gypsum, with the final surface of the fill graded so as to promote positive drainage off the closure area and to reduce the possibility of future ponding and resultant infiltration of rain water and snow melt into the underlying gypsum;
- placement and vegetation of a cover layer of approved growth medium or topsoil over the graded fill and the exposed downstream face of the stabilized embankment;
- construction of a lined channel along the west edge of the Gypsum Pond A-4 Closure area, as well as an appropriately sized culvert under McKinley Avenue, complete with upstream headwall, seepage barrier to restrict percolation under McKinley Avenue into the closure area and downstream erosion protection apron, and an armored or reinforced concrete spillway down the face of the embankment at the west abutment, to convey Magnet Gulch storm flows from McKinley Pond to Bunker Creek;
- realignment, upgrading and construction, as necessary, of a channel, extending from the north side of McKinley Avenue to Bunker Creek, to carry Deadwood Gulch flows past the Gypsum Pond A-4 Closure area; and

- construction of runoff control ditches, berms and discharge spillways, as necessary, around the perimeter of the Gypsum Pond A-4 Closure area.

The performance standards that apply to the identified components of work for the closure of the Gypsum Pond A-4 Closure include:

- grading of the closure fill such that the surface slope is not less than two (2) percent and not greater than five (5) percent;
- provision of a minimum aggregate cover thickness of twelve (12) inches, including a minimum of six (6) inches of clean soil overlying a minimum of six (6) inches of grading fill; and
- sizing of drainage channels and appurtenant works to accommodate the runoff flow and erosive forces resulting from the 100-year, 24-hour storm event.

### 3.0 DESCRIPTION OF PLANS AND REPORTS

The following list, which identifies plans and reports which may be submitted during the RD/RA for the Work, reflects the current status of the project and unique aspects of the Bunker Hill Site. Considerable progress has already been made on the RD process. A Draft Remedial Design Report (RDR), which addresses in detail the remediation requirements set forth in this Statement of Work, is attached to the Consent Decree. This RDR addresses many of the Components and information requirements set forth in RD/RA guidance. In addition, specific planning and reporting requirements have been developed which correspond to the RDR and further information to be generated in the RD/RA Process.

This Section is intended to provide a framework for developing plans and reports for the Work, and is not intended to be a prescriptive explanation of their content. Other information and requirements may be prescribed by EPA or the State through the review of the deliverables and other documents prepared by the Stauffer Entities under this Consent Decree. Unless otherwise specified, the description is not meant to distinguish between draft and final versions of the documents.

#### 3.1 Listing of Plans and Reports

The following is a list of the plans and reports described in this Section. Upon EPA's request any of these may be submitted in electronic form. This Section then sets forth a description of the types of information that should be included in the listed plans and reports.

- General Project Management
  - Project Management Monthly Reports
  - Technical Memoranda
- Remedial Design
  - Draft Remedial Design Report
  - Final Remedial Design Report
  - Sampling and Analysis Plan, Quality Assurance Project Plan and Health and Safety Plan as appropriate or as determined necessary by the Agencies.
- Remedial Action
  - Remedial Action Work Plan
  - Sampling and Analysis Plan, Quality Assurance Project Plan and Health and Safety Plan as appropriate or as determined necessary by the Agencies.
  - Construction Completion Report
  - Completion of Remedial Action Certification Report
  - Completion of the Work Report
  - Gypsum Pond A-4 Operation and Maintenance (O&M) Plan

## 3.2 General Project Management

### 3.2.1 Project Management Monthly Reports

The Project Management Monthly Reports shall be a consolidated status report on all Work. The Reports shall include, but are not limited to, the following basic information:

- Activities/tasks undertaken during the reporting period, and expected to be undertaken during the next reporting period.
- Summary of sampling and analysis data generated in connection with implementation of the Work.
- Deliverables and milestones completed during the reporting period, and expected to be completed during the next reporting period.
- Status of the overall project schedule and any proposed schedule changes.
- Summary of approved modifications or variances to work plans or schedules for the Work.

### 3.2.2 Technical Memoranda

The Technical Memoranda are the mechanism for requesting modification of plans, designs, and schedules. Technical memoranda are not required for non-material field changes that have been approved by EPA and IDHW. In the event that the Stauffer Entities determine that modification of an approved plan, design, or schedule is necessary, the Stauffer Entities shall submit a written request for the modification to the EPA Project Coordinator which includes, but is not limited to, the following information:

- General description of and purpose for the modification.
- Justification, including any calculations, for the modification.
- Proposed actions to be taken to implement the modification, including any actions related to subsidiary documents, milestone events, or activities affected by the modification.
- Recommendations.

## 3.3 Remedial Design

### 3.3.1 Draft Remedial Design Report

A Draft Remedial Design Report (Draft RDR) has been prepared for the Work to further define the scope of the Remedial Actions required by the RODs. The Gypsum Pond A-4 Closure RDR provides the approved conceptual design for the Work and presents the objectives and Performance Standards to be applied and design considerations suggested by recent field investigations.

### 3.3.2 Final Remedial Design Reports

The Final Gypsum Pond A-4 Closure RDR will be based upon the approved conceptual designs presented in the Draft RDR. The Final RDR represents the 100% design final plans and specifications, and shall include the basic information described for the Draft RDR in addition to incorporating any changes necessary that arise from EPA's comments and modifications. The Final RDR shall include the following:

- Design drawings.
- Design specifications.
- Design calculations.
- Design quality assurance considerations.
- General design concept and criteria of facilities to be constructed.
- Description of existing facilities and identification of any that will be altered, destroyed, or abandoned during construction.
- Description of off-site facilities required or affected.
- Analysis/discussion of Performance Standards and how they have been incorporated into the design.
- Design parameters dictated by the Performance Standards.

## 3.4 Remedial Action

### 3.4.1 Remedial Action Work Plan

The Remedial Action Work Plan shall provide for the construction of the remedy, in accordance with the SOW, as set forth in the design plans and specifications in any approved final design submittals required by the RDR. The Remedial Action Work Plan shall be the primary plan to control and guide the construction of the Elements or Components of Work performed by the Stauffer Entities under this Consent Decree.

The Remedial Action Work Plan shall include, but not be limited to, the following:

- An overall description of the work to be performed with cross-references to other documents, if any, containing more specific details.

- The technical approach for undertaking, monitoring, and completing the Element or Component of Work. The discussion should include a description of the procedures, specific activities and objectives of such activities, and facilities to be installed; the Performance Standards; identification of and plans for obtaining any necessary off-site access, permits, or approvals; and identification of and plans for any materials requiring disposal.

- A description of the deliverables and milestones.

- A construction schedule.
- Construction O&M requirements.
- Plan for integrating, coordinating, and communicating with EPA, IDHW, and other government officials.
- Quality assurance measures including:
  - Audits.
  - Routine procedures, including internal quality control checks.
  - Corrective action procedures.
  - Construction-related QA/QC.
- Additional health and safety measures.

QA/QC measures shall be in accordance with EPA guidance, including "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans", December 1980, (QAMS-005/80); "Data Quality Objective Guidance", (EPA/540/G87/003 and 004); and appropriate EPA Region 10 guidance.

### 3.4.2 Health and Safety Plan

A Remedial Action Health and Safety Plan shall establish health, safety, and emergency response procedures for field activities to be performed by the Settling Defendant. The Plan shall conform to applicable or appropriate Occupational Safety and Health Administration (OSHA) regulations, requirements, and guidance. The Plan, in conjunction with the above-referenced Remedial Action Work Plan, shall include, but not be limited to, the following basic information:

- Overall description of the Plan, including purpose and a general description of the Elements or Components of Work covered by the Plan.
- Emergency and post-emergency procedures, including the designation of the Stauffer Entities' emergency response coordinator.
- Standard job site health and safety considerations and procedures, including hazards evaluation and chemicals of concern.
- Communication and notification procedures within the Stauffer Entities' organization, and with EPA, State, other government officials, and community members.
- Personal Protective Equipment and instructions/procedures to ensure personnel protection and safety.
- Monitoring plans.
- Medical surveillance programs and training.



- Recordkeeping and reporting procedures.

#### 3.4.3 Construction Completion Report

The Construction Completion Report certifies the completion of construction of the Work. The report will provide evaluations of completion of Work relative to the scope outlined in the Work Plan. The Report shall include, but is not limited to, the following:

- Overall description of the Report, including purpose and a general description of the Work covered by the Report.
- Overall description of the Work and all associated facilities, appurtenances, and piping.
- As-built plans or plot plans and specifications including:
  - Construction QA/QC records.
  - Summary of any modifications implemented by Technical Memoranda.
- An Idaho-registered Professional Engineer must sign and stamp as-built plans.

#### 3.4.4 Completion of Remedial Action Certification Report

The Completion of Remedial Action Certification Report shall be submitted upon completion of all Work and achievement of Performance Standards. This report shall serve as the Stauffer Entities' documentation supporting completion of the remedial actions and achievement of the Performance Standards and request for certification from EPA for approval, with a copy to the State, pursuant to Paragraph 52 of the Consent Decree. The Report shall include, but are not limited to, the following information:

- Overall description of the Report, including purpose and a general description of the Work including the Components of Work covered by the Report. The general description shall include a description of the Work that was undertaken, objectives, period of operation, and Performance Standards.
- Findings and results of the pre-certification inspection, including supporting documentation that the Performance Standards, as appropriate, have been met.
- Contingency plans in the event that stated Performance Standards cannot be achieved in all areas.
- Cross-references to the Construction Completion Report(s), which presents as-built drawings, corresponding to the Elements or Components of Work addressed by the Completion of Remedial Action Certification Report.
- Demonstration that all obligations under this SOW and RDR have been satisfactorily completed or achieved by the Stauffer Entities in accordance with the Consent Decree.

- A statement by the Stauffer Entities' Project Coordinator that Remedial Action has been completed in full satisfaction of the requirements of the Consent Decree.
- A statement by an Idaho-registered Professional Engineer that the Remedial Action at Gypsum Pond A-4 has been completed in full satisfaction of this SOW and the plans and specifications presented in the Final RDR and the RAWP, or amendments thereto.

#### 3.4.5 Completion of the Work Report

This report shall be submitted after all phases of the Work (including any O&M obligations required by the Consent Decree) have been completed in full satisfaction of the requirements of this Consent Decree. Requirements of this report are set forth in Paragraph 53 of the Consent Decree. The Report shall comprehensively present the certifications by the Professional Engineer and Project Coordinator previously required for the Completion of Remedial Action Certification Report. Subsequent actions of the Stauffer Entities, such as O&M requirements, will be evaluated. If, after review, the Stauffer Entities believe that the Work has been completed in full satisfaction of the Consent Decree, the report shall be submitted containing the following statement, signed by a responsible corporate official of the Stauffer Entities or the Stauffer Entities' Project Coordinator:

*To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

#### 3.4.6 Operation and Maintenance (O&M) Plan

A plan addressing long-term operation and maintenance requirements for all aspects of Gypsum Pond A-4 Closure shall be prepared. This document shall reflect the specific post-remediation activities required to maintain remedy effectiveness and shall include, but not be limited to:

- Operational procedures.
- Operational emergency response.
- Maintenance procedures and schedules.

The Operation and Maintenance requirements for the Gypsum Pond A-4 Closure shall be consistent with land use of the Area as a closed but otherwise unimproved facility, regardless of the land use or overall site conditions after the closure of Gypsum Pond A-4.

#### 4.0 DELIVERABLES

This section presents listings of deliverables associated with the Work.

##### 4.1 Remedial Design

The following separate deliverables, for the corresponding Elements of Work, apply to Work conducted through completion of the remedial design:

- Draft Gypsum Pond A-4 Closure RDR
  - Draft Remedial Design Report (Attachment G to Consent Decree)
  - Draft Final Remedial Design Report
  - Final Remedial Design Report

##### 4.2 Remedial Action

The following deliverables will be required after completion of the remedial design phase:

- Draft Remedial Action Work Plan
- Final Remedial Action Work Plan
- Monthly Progress Reports
- Construction Completion Report
- Completion of Remedial Action Certification Report
- Operation and Maintenance Plan

##### 4.3 Health and Safety Plan

In addition to the above reports a Health and Safety Plan is also recognized as a deliverable.

##### 4.4 Completion of Work Report

A Completion of Work Report will also ultimately be prepared.

## 5.0 PROJECT SCHEDULE

This section provides:

- a schedule for all significant milestone events and activities; and
- a list of all deliverables and a master schedule for the production of these deliverables.

## 5.1 Gypsum Pond A-4

The attached Gypsum Pond A-4 - Remedial Action Sequence and General Schedule provides a basis for scheduling and subsequent deliverables/milestones. The controlling activities are the finalization of the Final Gypsum Pond A-4 Closure RDR and the Gypsum Pond A-4 Closure Remedial Action Work Plan. A Draft Final Gypsum Pond A-4 Closure RDR will be submitted within 90 days of the entry of the Consent Decree. A Draft Gypsum Pond A-4 Closure Remedial Action Work Plan will be produced within 180 days after approval of the Final Gypsum Pond A-4 Closure RDR, subject to confirmation of proposed remedial actions in areas upstream of and adjacent to the Area. A construction schedule will be provided in the EPA-approved Final Gypsum Pond A-4 Closure RDR. A Construction Completion Report will be provided within 60 days of completion of the remedial activities, and a Pre-Certification Inspection will be conducted within 90 days of concluding that the applicable Performance Standards have been attained. The Completion of Remedial Action Certification Report for Gypsum Pond A-4 Closure will be submitted within 30 days of the Pre-Certification Inspection.

## 5.2 Initial Planning Efforts

The Stauffer Entities will begin work on preparation of the following deliverables at the time of entry of the Consent Decree, in accordance with the schedule set forth in this SOW:

- Monthly Progress Reports
- Technical Memoranda (as needed)
- Draft Final Gypsum Pond A-4 Closure Remedial Design Report
- Final Gypsum Pond A-4 Closure Remedial Design Report
- Gypsum Pond A-4 Closure Remedial Action Work Plan
- Health and Safety Plan (as needed).

Gypsum Pond A-4 Closure - Remedial Action Sequence and General Schedule

TASK	DEADLINE
<ul style="list-style-type: none"> <li>Monthly Progress Reports</li> </ul>	Tenth day of each month following the reporting period
<ul style="list-style-type: none"> <li>Draft Final Gypsum Pond A-4 Closure RDR</li> </ul>	90 days after entry of the Consent Decree
<ul style="list-style-type: none"> <li>Final Gypsum Pond A-4 Closure RDR</li> </ul>	45 days after receipt of comments on Draft Final
<ul style="list-style-type: none"> <li>Draft Gypsum Pond A-4 Closure Remedial Action Work Plan</li> </ul>	180 days after approval of the Final RDR, and subject to confirmation of proposed remedial actions in upstream and adjacent areas
<ul style="list-style-type: none"> <li>O&amp;M Plan including provision for funding required O&amp;M activities</li> </ul>	Prior to submittal of Construction Completion Report
<ul style="list-style-type: none"> <li>Construction Completion Report</li> </ul>	60 days after completion of Construction
<ul style="list-style-type: none"> <li>Pre-Certification Inspection for Completion of Remedial Action Certification Report</li> </ul>	Within 90 days of concluding that Performance Standards have been attained for the Gypsum Pond A-4 Closure Element of Work
<ul style="list-style-type: none"> <li>Completion of Remedial Action Certification Report</li> </ul>	Within 30 days of Pre-Certification Inspection
<ul style="list-style-type: none"> <li>Pre-Certification Inspection for Completion of Work Report</li> </ul>	Within 90 days of concluding that all Work has been completed for the Gypsum Pond A-4 Element of Work
<ul style="list-style-type: none"> <li>Completion of Work Report</li> </ul>	Within 30 days of Pre-Certification Inspection

***Attachment F***

***Union Pacific SOW***

Attachment F

UNION PACIFIC AREA  
BUNKER HILL  
REMEDIAL ACTION  
STATEMENT OF WORK

December 1994

UNION PACIFIC AREA  
BUNKER HILL  
REMEDIAL ACTION  
STATEMENT OF WORK

1.0 INTRODUCTION, DEFINITIONS, AND GENERAL PROVISIONS

1.1 Introduction

This Statement of Work ("SOW") is one of two detailing the on-site activities to be undertaken by the Settling Defendants in compliance with the requirements of this Consent Decree. This SOW addresses only that portion of Work for which The Union Pacific Railroad (UPRR) is responsible. The area of The Union Pacific Railroad's responsibility is delineated on the Bunker Hill Superfund Site Allocation Map (Allocation Map), Attachment C to the Consent Decree. Stauffer Management Company's portion of the Work is defined in a separate SOW. This SOW clarifies Union Pacific's obligations under the Bunker Hill 1991 and 1992 Records of Decision ("RODs"), attached as Attachment A to the Consent Decree.

The Work shall be structured to allow the most expeditious implementation of actions in a coordinated sequence that integrates remediation goals and minimizes short-term impacts and disruptions to the affected communities. The Work shall be organized as described below. The Work is further described in the Union Pacific Area Remedial Action Work Plan (UPRAWP), Attachment H to the Consent Decree in draft form.

1.2 Definitions

Terms used in this SOW are as defined below or, as to others, by this Consent Decree, CERCLA and the NCP.

1.2.1 "Rock barriers" shall contain mean concentrations less than 100 ppm lead, 100 ppm arsenic and 5 ppm cadmium. No single sample shall exceed 150 ppm lead.

1.3 General Provisions

1.3.1 The Work activities associated with this SOW are final remedial actions. Remedial actions outlined in this SOW shall meet Performance Standards specified in Section 2.1.

1.3.2 UPRR will begin performance of the Work as described in Section 5.0 of this document. UPRR will not, however, be required to commence construction or sampling until this Consent Decree has been entered by the Court or unless such construction or sampling is otherwise ordered by the Court.

1.3.3 The Work, or a portion of the Work shall be integrated and coordinated in a manner consistent with all other Work under this Consent Decree, and with all operations and/or tasks pertaining to the Site undertaken by others, including, but not limited to, emergency response activities.

1.3.4 Any repairs required to community infrastructure, such as roads and utilities, due to the implementation of the Work, shall be performed in a timely manner with minimal disruption to service.



- 1.3.5 Whenever UPRR is obligated to perform an activity under this SOW, they may perform the activity themselves or engage a contractor (or contractors) accepted by the State and EPA, unless other arrangements are mutually agreed upon, in fulfillment of their obligation.
- 1.3.6 During remedial construction activities, dust control measures shall be implemented to control the transport of contaminated material. Dust control activities may include, but are not limited to, engineering and construction practices, the use of water to wet down areas or polymeric, chemical or physical surface sealers for temporary dust control.
- 1.3.7 Actions undertaken by UPRR within the RROW will be coordinated with remedial activities in adjacent areas. Specifically, UPRR will coordinate with the Agencies' on their remedial activities.
- 1.3.8 Appropriate controls shall be used to prevent or minimize exposures during performance of the Work to on-site workers and the public. Access controls may include, but are not limited to, fencing and signs.
- 1.3.9 Appropriate controls shall also be applied, as necessary, to restrict access to potential source areas, to control transport of contaminants, and to control exposures to contaminants of concern during construction activities.
- 1.3.10 The release of contaminants during remedial construction activities shall be controlled. This shall include, but not be limited to, the management of runoff to minimize transport to surface water. Storm water management during remedial implementation shall be consistent with all Federal, State, and local requirements.
- 1.3.11 The objective of routine site maintenance is to ensure that control measures at the Site continue to be effective and achieve Performance Standards over the long term.
- 1.3.12 Work performed shall minimize operation and maintenance (O&M) requirements. A comprehensive post-closure O&M program will be defined during Remedial Action through preparation of a post-closure O&M Plan.
- 1.3.13 Union Pacific will have access to a repository at the Site for disposal of Waste Materials, including treated Waste Materials, from the Union Pacific Area prior to certification of completion of the Remedial Action. After certification of completion of the Remedial Action, Union Pacific shall provide for disposal of Waste Materials from the Union Pacific Area.

## 2.0 DESCRIPTION OF WORK TO BE PERFORMED, PERFORMANCE STANDARDS AND OBJECTIVES

This Section sets forth The Union Pacific Railroad portion of Work to be performed pursuant to this Consent Decree and states the Objectives and Performance Standards for the Work. This Work to be conducted is within the boundaries of the Union Pacific Area presented in the Allocation Map. The draft UPRAWP, Attachment H to the Consent Decree, describes the Work in more detail.

The remedial actions described below, as well as those to be conducted by others, comprise a site-wide comprehensive remedy consisting of a combination of treatment, containment, and engineering and institutional controls.

### 2.1 The Union Pacific Railroad ROW

Remediation of The Union Pacific Railroad Right-of-Way (RROW) is described more specifically in the draft UPRAWP. The draft UPRAWP prescribes specific Remedial Action for segments of the RROW based on adjacent land use and lead concentration levels.

The principal objective of remediation activities along the RROW is to control direct contact risk and migration of contaminants originating from the RROW through air and water. This objective will be met by removal of ballast and/or contaminated soil with concentrations of lead in excess of 30,000 ppm not attributable to tailings and/or waste rock, and subsequent barrier placement for areas with lead concentrations of 1,000 ppm or greater.

Performance standards for the RROW are as follows:

- All portions of the RROW with lead concentrations of 1,000 ppm or greater in the top 12 inches of ballast and/or contaminated soil shall receive, upon EPA approval in consultation with the State, one or more of the following treatments: barrier placement; removal/replacement; revegetation; and/or access control, dependent upon geographic location and current land use. Barrier type and thickness will also be determined based on geographic location, current land use, and the remedy applied in adjacent areas. The barrier selected and placed, will be in compliance with the Institutional Controls Program (ICP) barrier standards.
- Prior to other remedial activities, visually identified surface deposits of concentrates will be removed from the RROW to the extent practicable to minimize the potential for disturbance and the exposure risk posed by the accessible concentrate.
- Dust control activities will be conducted annually, as needed, until the RROW has been remediated.
- All ties will be removed for disposal in one of the Site closure areas made available to UPRR by the State and EPA. Each tie will be cut into 3 pieces, utilizing UPRR's automated track dismantling equipment, prior to disposal. The ties will be delivered to a staging area or specific closure area within the Site to be designated by the State and EPA. Rails will be decontaminated with a high-pressure wash and reused or recycled as scrap steel. Plates and spikes associated with the track may be disposed with the ties or recycled with the rails.

- Composite sampling over the length of the RROW will be used to guide remediation (excluding the Concentrator area where removal to 18 inches will occur). The RROW will be divided into three linear portions (strips) for sampling purposes: the central strip of the RROW, which comprises the track and ballast bed, and the remainder of the RROW on either side of the central strip. For areas where a single track is present, the width of the central strip will be 20 feet. For areas where double tracks are present, the width of the central strip will extend 6 feet beyond the edge of the ties. A site plan that shows total RROW width, strip widths, and sampling locations will be prepared for each 250-foot segment of the RROW as part of the Annual Remedial Action Implementation Plan.
- Subsamples will be collected along the center of each strip at a spacing of every 50 feet. At each location, subsamples will be collected at depth increments of 0 to 6 inches, 6 to 12 inches, and 12 to 18 inches. Composites made from 5 subsamples will be prepared for every 250-foot length of each of the three strips for each of the three depth intervals. For areas where double tracks are present, samples from the central strip will be collected alternately between each set of rails. Sample locations will be shown on the site plan for each 250-foot segment of the RROW.
- Using this approach, and assuming that approximately 35,000 feet of RROW within the Site requires sampling, approximately 1,260 composite samples (420 samples from each of the three depth increments for the three strips) will be submitted to a laboratory for lead analysis.
- The depth of removal required for each 250-foot strip of RROW will be based on the lead concentrations in the composite samples from its 0 to 6-inch, 6 to 12-inch, and 12 to 18-inch depth increments. The need for removal will be based on a threshold lead concentration of 30,000 ppm, which is representative of mine tailings and waste rock. For example, if the 0 to 6-inch interval in a given strip is 10,000 ppm, the 6 to 12-inch interval is 60,000 ppm, and the 12 to 18-inch interval is 20,000 ppm, removal for the 250-foot strip would occur to a depth of 12 inches. In addition, if during excavation activities along the RROW concentrates are visually identifiable below the planned removal depth, excavation will continue to the depth necessary to remove the visually identified concentrate.
- Following sampling and excavation, all areas of the RROW which have had removal actions will undergo verification sampling on 250-foot intervals to verify that lead concentrations above 30,000 ppm not attributable to tailings or waste rock have been removed prior to barrier placement. Verification sampling will consist of compositing 5 subsamples over each 250-foot interval, field sieving, and field analysis by x-ray fluorescence (XRF).
- The ROW adjacent to the Concentrator will undergo excavation and removal to a depth of 18" (as described in the draft RAWP), prior to placement of a protective barrier; excavated ballast and/or contaminated soil will be treated, as necessary, and disposed of in a Site closure area made available to UPRR by the State and EPA.
- Excavated ballast and/or contaminated soil will be sampled for lead concentrations prior to disposal. Testing for Principal Threat Criteria for excavated ballast and/or contaminated soil will be on

composite samples passing a 1/4-inch or less sieve fraction. Ballast and/or contaminated soil with concentrations in excess of the Principal Threat Criteria of 84,600 ppm lead, will require treatment prior to disposal.

- Excavated ballast and/or contaminated soil shall be consolidated under the Smelter Complex cap or in another area approved by the State and EPA in accordance with their Memorandum of Agreement (MOA). Remedial activities for the RROW will be coordinated with the Agencies' schedule for closure of the Smelter Complex and CIA. The coordination will address the placement of excavated RROW materials in these areas.
- Portions of the RROW adjacent to residential properties shall be treated utilizing barrier thickness criteria presented in the Residential Yards Remedial Design Report (MFG, 1994b). Remedial actions in these areas will result in a minimum 12-inch protective barrier over ballast and/or contaminated soil with lead concentrations of 1,000 ppm or more. No action will be required in those areas with lead concentrations less than 1,000 ppm.
- For those portions of the RROW not adjacent to residential properties, a 6-inch barrier will be placed, or another remedy consistent with the adjacent property, where a 1,000 ppm lead concentration criteria is exceeded. No action will be required in these areas with lead concentrations less than 1,000 ppm.
- Rock barriers, or another material which complies with the ICP, installed on the RROW will be screened to a median size ( $D_{50}$ ) of approximately 1.5 inches, with no individual particle exceeding 3 inches in diameter.
- Where barriers are utilized, the barriers shall have sufficient durability to minimize future O&M requirements.

### 3.0 DESCRIPTION OF PLANS AND REPORTS

The following list, which identifies plans and reports which will be submitted for the Work, reflects the current status of the project and unique aspects of the Bunker Hill Site. A draft Remedial Action Work Plan, which addresses in detail the remediation requirements set forth in this Statement of Work, is attached to the Consent Decree. The draft Remedial Action Work Plan addresses many of the Components and information requirements set forth in RD/RA guidance.

This Section is intended to provide a framework for developing plans and reports for the Work, and is not intended to be a prescriptive explanation of their content. Unless otherwise specified, the description is not meant to distinguish between draft and final versions of the documents.

#### 3.1 Listing of Plans and Reports

The following is a list of the plans and reports described in this Section. Upon the State's and EPA's request, any of these may be submitted in electronic form. This Section then sets forth a description of the types of information that should be included in the listed plans and reports.

- General Project Management
  - Project Management Monthly Reports
  - Technical Memoranda
- Remedial Action
  - Health and Safety Plan
  - Annual Remedial Action Implementation Plan
  - Annual Construction Completion Report
  - Completion of Remedial Action Certification Report
  - Completion of the Work Report
  - Union Pacific Railroad Right-of-Way Post-Remedial Action Operations and Maintenance (O&M) Plan

#### 3.2 General Project Management

##### 3.2.1 Project Management Monthly Reports

The Project Management Monthly Reports shall be a consolidated status report on all Work. The Reports shall include the following basic information:

- Introduction, including the purpose and general description of the Work currently being conducted.
- Activities/tasks undertaken during the reporting period, and expected to be undertaken during the next reporting period.
- Deliverables and milestones completed during the reporting period, and expected to be completed during the next reporting period.

- Identification of issues and actions that have been or are being taken to resolve the issues.
- Status of the overall Project Schedule and any proposed schedule changes.

### 3.2.2 Technical Memoranda

The Technical Memoranda are the mechanism for requesting modification of plans, designs, and schedules. Technical memoranda are not required for non-material field changes that have been approved by the State and EPA. In the event that UPRR determines that modification of an approved plan, design, or schedule is necessary, UPRR shall submit a written request for the modification to the State and EPA Project Coordinators which includes, but is not limited to, the following information:

- General description of and purpose for the modification.
- Justification, including any calculations, for the modification.
- Actions proposed to implement the modification, including any actions related to subsidiary documents, milestone events, or activities affected by the modification.
- Recommendations.

## 3.3 Remedial Action

### 3.3.1 Health and Safety Plan

A Remedial Action Health and Safety Plan shall establish health, safety, and emergency response procedures for field activities to be performed by UPRR. The Plan shall conform to applicable Occupational Safety and Health Administration (OSHA) regulations, requirements and guidance, and/or applicable State and EPA requirements. The Plan, in conjunction with the Remedial Action Work Plan and Remedial Action Implementation Plan, referenced above, shall include the following basic information:

- Overall description of the Plan, including purpose and a general description of the Elements or Components of Work covered by the Plan.
- Emergency and post-emergency procedures, including the designation of UPRR's emergency response coordinator.
- Standard job site health and safety considerations and procedures, including hazards evaluation and chemicals of concern.
- Communication and notification procedures within UPRR's organization, and with the State and EPA, other government officials, and community members.
- Personal Protective Equipment and instructions/procedures to ensure personnel protection and safety.

- Monitoring plans.
- Medical surveillance programs and training.
- Recordkeeping and reporting procedures.

### 3.3.2 Annual Remedial Action Implementation Plan

The Annual Remedial Action Implementation Plan shall include the following information for the Work to be conducted for the year:

- A general description of remedial activities to be conducted
- Site plans for segments to be sampled and/or remediated
- A detailed sampling and analysis plan
- A discussion of specific quality assurance (QA) procedures
- A discussion of any special health and safety requirements
- A schedule for the Work to be conducted during the year
- An updated master Project Schedule

### 3.3.3 Annual Construction Completion Report

The Annual Construction Completion Report certifies the completion of construction of a particular Element or Component of Work. The report will provide evaluations of completion of Work relative to the scope outlined in the Work Plan and the Annual Remedial Action Implementation Plan. The Report shall include the following:

- Overall description of the Report, including purpose and a general description of the Element(s) or Component(s) of Work covered by the Report.
- Overall description of the Work.
- As-built plans or site plans and specifications including:
  - Construction Quality Assurance/Quality Control (QA/QC) records
  - Summary of any modifications implemented by Technical Memoranda

### 3.3.4 Completion of Remedial Action Certification Report

The Completion of Remedial Action Certification Report shall be submitted upon completion of UPRR's Remedial Action and attainment of Performance Standards, as clarified by this SOW. This report shall serve as UPRR's documentation supporting completion of the Remedial Actions and achievement of the Performance Standards and to request certification for approval pursuant to Paragraph 52 of the Consent

Decree. The Reports shall include, but are not limited to, the following information:

- Overall description of the Report, including purpose and a general description of the Work including the Components of Work covered by the Report. The general description shall include a description of the Work that was undertaken, objectives, period of operation, and Performance Standards.
- Findings and results of the pre-certification inspection, including documentation supporting that the Performance Standards, as clarified by this SOW, have been attained.
- Cross-references to the Construction Completion Report(s), which presents as-built drawings, corresponding to the Elements or Components of Work addressed by the Completion of Remedial Action Certification Report.
- A statement that the Remedial Action has been completed in full satisfaction of the SOW and RAWP.
- A statement by a registered professional engineer and UPRR's Project Coordinator that Remedial Action has been completed in full satisfaction of the requirements of the Consent Decree.

### 3.3.5 Completion of the Work Report

This report shall be submitted after all phases of the Work (including any O&M obligations required by the Consent Decree) have been fully performed, as set forth in Paragraph 53 of the Consent Decree. The Report shall present the certifications by the Project Coordinator previously required for the Completion of Remedial Action Certification Report. Subsequent actions of UPRR, such as O&M requirements, will be addressed.

### 3.3.6 Operation and Maintenance (O&M) Plan

A plan addressing operation and maintenance requirements for all aspects of the RROW shall be prepared. This document shall reflect the specific post-remedial activities required to maintain remedy effectiveness and shall include, but not be limited to:

- Operational procedures
- Operational emergency response
- Maintenance procedures and schedules



#### 4.0 DELIVERABLES

This section presents listings of deliverables associated with the Work.

##### 4.1 Remedial Action

The following deliverables will be required:

- Project Management Monthly Reports
- Annual Remedial Action Implementation Plan (including master Project Schedule)
- Annual Construction Completion Reports
- Completion of Remedial Action Certification Report
- Post Closure O&M Plan

##### 4.2 Health and Safety Plan

In addition to the above reports, a Health and Safety Plan is also required as a deliverable.

##### 4.3 Completion of Work Report

A Completion of Work Report will also be prepared in accordance with Paragraph 53 of the Consent Decree.

## 5.0 PROJECT SCHEDULE

The Project Schedule provides:

- a master schedule for all significant milestone events and activities; and
- a list of all deliverables and a master schedule for the production of these deliverables.

The attached General Schedule provides a basis for scheduling and subsequent deliverables/milestones. The controlling activities are those to be conducted in adjacent areas of the Site and those conducted by the Agencies. A detailed master Project Schedule will first be provided in the initial Annual Remedial Action Implementation Plan. The master Project Schedule will be updated in subsequent Annual Remedial Action Implementation Plans. The master Project Schedule will be developed in consultation with the State and EPA in order to coordinate RROW remedial activities with those conducted by the Agencies.

A draft Annual Remedial Action Implementation Plan will be produced for review and approval by the State and EPA in accordance with the MOA on or before March 15 of each year. The Annual Remedial Action Implementation Plan will be finalized within 30 days of receipt of State and EPA comments.

An Annual Construction Completion Report will be provided within 60 days of completion of the years' remedial activities, and a Pre-Certification Inspection will be scheduled within 90 days of UPRR's conclusion that the applicable Performance Standards have been attained. The Completion of Remedial Action Certification Report for The Union Pacific Railroad Right-of-Way will be submitted in accordance with Paragraph 55 of the Consent Decree.

Each year's Work will be initiated by May 15, if weather conditions allow, or within 14 days of approval of the final Annual Remedial Action Implementation Plan (whichever is later) and shall be completed by December 31 or earlier.

## 5.1 Initial Planning Efforts

UPRR will begin work on preparation of the following deliverables at the time of lodging of the Consent Decree, in accordance with the schedule set forth in this SOW:

- Annual Remedial Action Implementation Plan
- Project Management Monthly Reports
- Technical Memoranda (as needed)
- Health and Safety Plan

## Union Pacific RROW - Remedial Action Sequence and General Schedule

TASK	DEADLINE
● Draft Annual Remedial Action Implementation Plan	March 15 of the calendar year in which Work will be conducted <sup>1</sup>
● EPA and State comments on Annual Remedial Action Implementation Plan	April 15 <sup>1</sup>
● Final Annual Remedial Action Implementation Plan	within 30 days after receipt of State and EPA comments
● Project Management Monthly Reports	tenth day of each month following the reporting period <sup>1</sup>
● Initiation of Remedial Action	May 15 <sup>1</sup> or within 14 days of approval of the final Annual Remedial Action Implementation Plan, whichever is later
● Annual Construction Completion Report	60 days after completion of Construction
● Pre-Certification Inspection for Completion of Remedial Action Certification Report	will be scheduled within 90 days of concluding that Performance Standards have been attained for the RROW Remedial Action
● Completion of Remedial Action Certification Report	in accordance with Consent Decree
● Pre-Certification Inspection for Completion of Work Report	will be scheduled within 90 days of concluding that all Work has been completed
● Completion of Work Report	in accordance with Consent Decree

1

These specific scheduled dates apply to first full calendar year after entry of the Consent Decree. Other activities may proceed prior to entry of the Consent Decree if mutually agreed by the parties.

***Attachment G***

***Stauffer Entities Draft RDR***

**BUNKER HILL SUPERFUND SITE**  
**GYPSUM POND A-4 CLOSURE**  
**DRAFT REMEDIAL DESIGN REPORT**

**December 1994**

**Prepared For:**

**STAUFFER ENTITIES**

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BUNKER HILL SUPERFUND SITE  
GYPSUM POND A-4 CLOSURE  
DRAFT REMEDIAL DESIGN REPORT

1.0 INTRODUCTION

This Remedial Design Report (RDR) presents the design for closure of Gypsum Pond A-4, located in the Bunker Creek corridor at the mouth of Magnet Gulch. This document reflects the concepts outlined in the September 1992 Record of Decision (ROD) and the Bunker Hill Remedial Design and Remedial Action A-4 Gypsum Pond Subarea Statement of Work and is provided as Attachment G to the Consent Decree.

This RDR includes discussions of applicable technical analyses, closure designs, construction considerations, and long-term operations and maintenance (O&M) requirements related to closure of the impoundment. The relative location and extent of the existing facility is shown on Figure 1-1. The elements of work addressed in this RDR include:

- Closure-in-place of Gypsum Pond A-4, including placement of a grading fill and vegetative cover;
- Embankment stability analyses for the A-4 embankment; and
- Design of drainage facilities related to the A-4 closure.

1.1 SITE DESCRIPTION

Gypsum Pond A-4 is located near the mouth of Magnet Gulch, between McKinley Avenue and Bunker Creek, and immediately south of the Central Impoundment Area (CIA) Middle Cell (A-5). The A-4 facility covers an area of approximately 13.5 acres. The impoundment extends approximately 1,600 feet from east to west and approximately 550 feet from north to south. The gypsum is contained on the north by a constructed embankment, composed of mine waste rock, and on the south by the McKinley Avenue road embankment. Physical data collected during the Bunker Hill

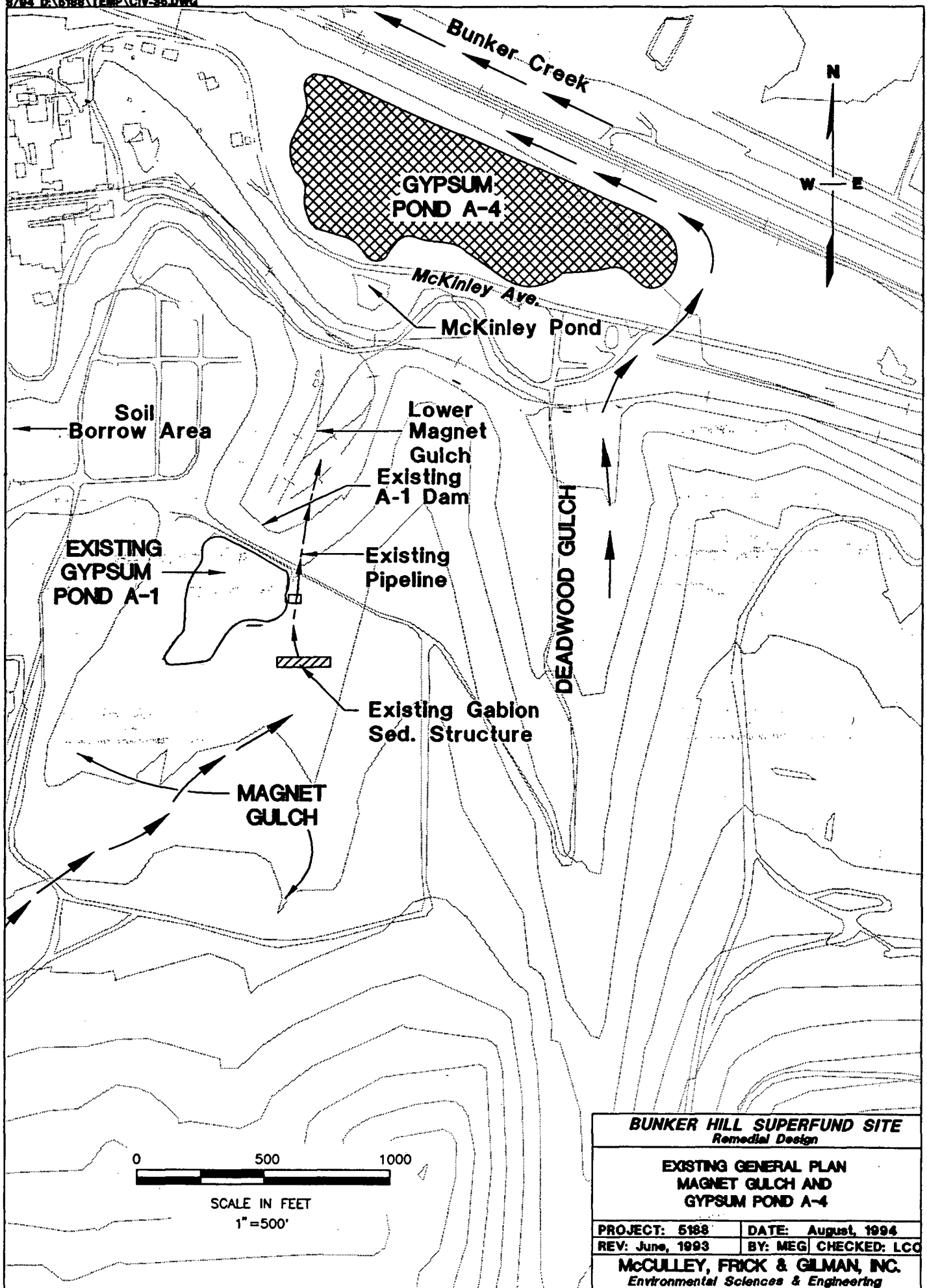


Figure 1-1

Remedial Investigation (RI) indicated that the maximum depth of gypsum, in the north-central region of the impoundment, is approximately 37 feet. The floor of the impoundment slopes gently downward toward the north (P.M. Jasberg, Jasberg Technical Services, Kellogg, Idaho, personal communication, November 16, 1992), as does the surface of the impounded gypsum. The north perimeter embankment is approximately 40 to 45 feet above the valley floor and extends approximately 8 to 10 feet above the gypsum surface. Based on extrapolation of adjacent topography, the volume of gypsum in the A-4 facility is estimated to be approximately 485,000 cubic yards (cy). In addition, a thin layer of mine waste rock, originally placed as a protective cap, is present on portions of the surface of the impounded gypsum.

The gypsum contained in the A-4 facility was produced between 1964 and 1970 as a waste byproduct during production of phosphoric acid at the Phosphoric Acid/Fertilizer Plant in Government Gulch (MFG, 1992b). Chemically, the gypsum deposited in Gypsum Pond A-4 is predominantly calcium sulfate ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ ) with traces of impurities.

A majority of the surface runoff flowing toward Gypsum Pond A-4 originates in the Magnet Gulch catchment area to the south of the facility. At present, the tributary flow from the upper region of the catchment area is diverted around the existing A-1 gypsum impoundment via a small diversion channel leading to a gabion check dam, which reduces flow velocities and sediment loading, and then into a pair of culverts (15 inch and 18 inch diameter), which discharge downstream of the A-1 embankment. The discharge from these culverts, along with any seepage passing through the A-1 embankment, is collected into a 4-foot square, concrete-box tunnel in lower Magnet Gulch, which passes beneath a fill area comprised of mine-waste material. The discharge point of this tunnel is covered and thus the exact location is unknown. During recent investigations of the tunnel, an inspector, properly equipped for confined space entry, entered the tunnel through an intermediate

manhole. Passage along the tunnel was restricted due to accumulation of sediments, however, the inspector was able to determine a bearing and estimated downstream length of the tunnel and use that information to approximate the location of the terminus of the buried structure. Subsequent excavation in the vicinity of the anticipated terminus, near the south edge of McKinley Pond, failed to uncover the tunnel outlet, but did reveal a significant flow of groundwater comparable to that observed flowing in the tunnel. Later injection of dye into the tunnel flow, during a site inspection attended by representatives of Stauffer, their consultants, EPA and IDHW, resulted in a distinct corresponding coloration of the flow emanating from the previously excavated area south of McKinley Pond. Based on this evidence, it was concluded that the terminus of the tunnel is located south of McKinley Pond, and that the flow in the tunnel is not specifically conveyed beyond McKinley Pond. Currently, the tunnel outlet remains buried by material which appears to have sloughed from the face of the Highline Railroad embankment, and the flow from the tunnel percolates through this sloughed material and into McKinley Pond.

Drainage from Magnet Gulch, which consists primarily of collected surface discharge but also includes some natural subsurface drainage, flows over and through the High-Line railroad embankment into McKinley Pond and from there percolates under McKinley Avenue, possibly through an old silted culvert and the surrounding road embankment, and into the A-4 impoundment area. The area where the flow discharges into the A-4 impoundment is relatively small and the concentrated flow of water contacting the gypsum in this area has resulted in the formation of solution cavities and sinkholes. It is believed that at least a portion of this flow then migrates along the floor of the impoundment and percolates through the northern embankment, as evidenced by numerous seeps along the toe of this structure.

Gypsum Pond A-4 has been in place for approximately 30 years, with minimal drainage controls. The lack of adequate stormwater

management controls for flows impacting the A-4 facility is considered to be the primary cause of the current physical condition of the facility and any resultant contaminant loading that is contributed to groundwater. Currently, there are also no proper flow controls, nor any specific discharge points for surface drainage or runoff of precipitation or snowmelt falling directly onto the impounded gypsum. Consequently, water has periodically ponded at low points on the gypsum surface, notably in the northeast region of the impoundment, adjacent to the upstream face of the embankment. This uncontrolled ponding of water is suspected to be the cause of formation of small to moderately sized solution cavities and cracks in the gypsum surface at this and other locations where there is evidence that localized ponding has occurred. Such surface ponding, as well as cyclic wetting and drying of the gypsum surface throughout the A-4 closure area, will be eliminated upon construction of a grading fill over the impounded gypsum to promote positive surface drainage.

In preparation for development of final designs for the A-4 closure, further geotechnical investigations will be conducted in key areas of the closure site, including the existing embankment and along the alignment of the drainage channel. These geotechnical investigations will involve development of additional borings and collection of appropriate data to supplement the data obtained from previous work. The supplemental borings will be located in areas where signs of distress are evident and in areas that are expected to be representative of subsurface conditions.

The original decant for the A-4 impoundment was reportedly located at the northwest corner of the impoundment (P.M. Jasberg, personal communication, November 1992). The decant inlet, consisting of a steel grate installed over the open end of the upstream length of vitrified clay pipe, is visible projecting at an oblique angle above the surface of the gypsum. However, the downstream portion of the decant piping has apparently become clogged with gypsum or other materials at some point below the inlet and does not appear to provide a conduit for flow, as

evidenced by the lack of a concentrated seep discharge in the vicinity of the left (west) abutment.

In addition to the flows from Magnet Gulch, drainage flows from Deadwood Gulch are also a consideration in the closure of the A-4 facility. The Deadwood Gulch flows are currently diverted around the east side of the A-4 impoundment and along a channel which appears to be an inclined ramp or bench of the downstream face of the embankment. The channel flows westward for a short distance, parallel to the toe of the embankment, and then turns northward and discharges into Bunker Creek.

## 1.2 PERFORMANCE OBJECTIVES AND STANDARDS

The principal objective, as stated in the ROD, for remediation activities at Gypsum Pond A-4 is to reduce contaminant migration from the gypsum to ground water, surface water and air. This objective will be achieved through the following remedial actions:

- Removal of the upper portion of the existing Gypsum Pond A-4 embankment above the level of the existing surface of the impounded gypsum and regrading of the downstream face of the embankment to enhance the stability of the structure and reduce surface erosion;
- Placement of a compacted fill over the impounded gypsum, comprised of well-graded, silty, sandy gravel, with the final surface of the fill contoured to promote positive drainage off the closure area and to reduce the possibility of future ponding and resultant infiltration of rain water and snow melt into the underlying gypsum;
- Placement and vegetation of a cover layer of approved growth medium or topsoil over the graded fill and the exposed downstream face of the stabilized embankment;
- Construction of a lined channel along the west edge of the Gypsum Pond A-4 Closure area, as well as an appropriately sized culvert under McKinley Avenue, complete with upstream headwall, seepage barrier designed to minimize subsurface flow under McKinley Avenue, and downstream erosion protection apron, and a spillway, constructed of reinforced concrete or grouted riprap, down the face of the embankment at the west abutment to

convey Magnet Gulch storm flows from McKinley Pond to Bunker Creek;

- Realignment, upgrading and/or construction of a channel, extending from the north side of McKinley Avenue to Bunker Creek, to carry Deadwood Gulch flows past the Gypsum Pond A-4 Closure area; and
- Construction of appropriate runoff/runoff control ditches, berms and discharge spillways around the perimeter of the Gypsum Pond A-4 Closure area.

Detailed specifications for the various closure structures and materials will be developed as part of the final design of the Gypsum Pond A-4 Closure.

The performance standards that apply to the identified components of work for the Gypsum Pond A-4 Closure include:

- Grading of the closure fill such that the surface slope is not less than two (2) percent and not greater than five (5) percent;
- Provision of a minimum aggregate cover thickness of twelve (12) inches, including an minimum of six (6) inches of approved growth medium or topsoil and vegetation overlying a minimum of six (6) inches of grading fill;
- Sizing of a lined drainage channel and appurtenant works to accommodate the runoff flow and erosive forces resulting from the 100-year, 24-hour storm event; and
- "Clean soil" ( fill material, growth medium or topsoil), for use in construction of the vegetated cover layer on the closure, shall contain mean concentrations less than 100 ppm lead, 100 ppm arsenic and 5 ppm cadmium. No single sample shall exceed 150 ppm lead.

## 2.0 TECHNICAL ANALYSIS

This section presents a general overview of the remedy and the technical basis for the development of the remedial design and specification for the proposed closure. Specifically, this section focuses on the geotechnical, hydrologic, and hydraulic characteristics of the closure area, and provides the basis for development of the site-specific design concept. The design and specification presented in this RDR will serve as the basis for development of the final design and remedial action work plan. Aspects of the work evaluated include:

- Closure-in-place of the A-4 gypsum impoundment;
- Stability of the A-4 embankment;
- Potential settlement of the closure surface;
- Drainage management and hydraulic controls in the vicinity of the impoundment; and
- Potential erosion of the closure and embankment surfaces.

These evaluations form the basis for selection of the appropriate technology and materials for the site-specific application, as reflected in the design presented in Section 3.0.

### 2.1 REMEDY OVERVIEW

Gypsum Pond A-4 will be closed in place. Selection of this remedy is based upon the engineering feasibility of such a closure, as presented in this RDR, and consideration of ground-water and surface-water hydrology in the area. In-place closure will include removal of the upper portion of the existing embankment and stabilization of the embankment by the addition of compacted fill on the downstream face to achieve a finished slope no steeper than 2 (horizontal):1 (vertical). Fill material will be placed over the surface of the existing impounded gypsum and graded to achieve a final surface slope, generally toward the north, of approximately two to five percent. This will promote positive runoff of surface



water to a controlled discharge point. On top of the grading fill, a layer of at least six inches of approved growth medium or topsoil will be placed and vegetated. A small runoff control ditch will be constructed around the upgradient perimeter of the closure area to limit local runoff to the surface. To further control potential migration of contaminants, other sources of surface water and groundwater inflow to the closure area will be controlled through upgrading of the McKinley Pond outlet area; conveyance of surface flows from Magnet Gulch in a lined ditch around the west side of the closure; and identification and elimination, to the extent practicable, of other ground-water inflows from Magnet Gulch and adjacent areas. The channel around the west side of the closure will be lined with a geomembrane to restrict infiltration of surface water from the channel into the impoundment area and the channel will be armored with riprap to prevent erosion. Once closure of Gypsum Pond A-4 is completed and following an appropriate period to allow for establishment of mature surface vegetation, the area will be suitable for limited recreational use.

Remedial activities associated with the closure of Gypsum Pond A-4 will be coordinated and integrated with remedial designs for adjacent areas. Information from Agency representatives indicates that the contemplated remedy for Magnet Gulch, south of McKinley Avenue, includes complete removal of the existing A-1 facility and the waste rock storage area downstream of the A-1 embankment, leading to full restoration of the area to a natural condition and natural drainage paths. Accordingly, stormwater management works at the A-4 area, including the culvert under McKinley Avenue and the channel to convey Magnet Gulch drainage past the closure area to Bunker Creek, will be sized to accommodate unattenuated and undiverted storm flows from the entire Magnet Gulch drainage area. Similarly, discharge works from the A-4 channel will be designed to deliver flows to the Bunker Creek channel, such that no damage or impediment is caused to that facility or the surrounding area.

Provision will also be made to convey flows discharging from Deadwood Gulch around the A-4 closure area and into Bunker Creek.

The existing channel will be relocated away from the face of the A-4 embankment to a new alignment between the A-4 closure area and the site of the proposed detention pond site to the east. The siting of the new Deadwood Gulch channel will be selected such that land use conflicts are minimized and construction and operation are facilitated. As necessary, the new channel will be lined and armored, and energy dissipation structures will be included to protect against future damage to the A-4 closure from storm flows.

#### 2.1.1 Compliance With State and Federal ARARs

The remedial design presented in this RDR has been developed to provide for attainment of performance standards and to comply with pertinent aspects of state and federal Applicable, Relevant, and Appropriate Requirements (ARARs). Compliance with ARARs, as they relate to the design and construction phases of the closure, is summarized in this section. The intent of this section is to provide additional, remedy-specific discussion to supplement the compliance analyses for key state and federal ARARs previously developed in the Bunker Hill Feasibility Study (FS) Report, Appendix J. (MFG, 1992b).

Because Gypsum Pond A-4 is essentially comparable to a tailings impoundment, the remedial design for the A-4 closure incorporates pertinent aspects of the State of Idaho Rules and Regulations for Mine Tailings Impoundment Structures (1980). The closure design addresses the requirement that the facility be protected against washout in the event of 100-year, 24-hour flood flows, reflecting the location of the A-4 embankment, within the floodplain of the South Fork Coeur d'Alene River (SFCDR).

Key federal, chemical-specific ARARs that are applicable to remedial activities in the Gypsum Pond A-4 area include substantive provisions of the National Ambient Air Quality Standards (NAAQS) of the Clean Air Act for general closure construction activities and the National Pollutant Discharge Elimination System (NPDES)

substantive requirements of the Clean Water Act for discharges from the closure area during construction.

The federal action-specific applicable requirement addressed by the remedial design is the requirement for maintenance of the disposal facility. Federal action-specific relevant and appropriate requirements which are pertinent to the construction phase as well as the remedial design involve releases of airborne contaminants during remedial activities, as determined by Threshold Limit Values (TLVs) established by the American Conference of Government Industrial Hygienists (ACGIH) and stormwater discharges, consistent with substantive requirements of the NPDES Storm Water Discharge regulations. For releases of airborne contaminants during remedial activities, Estimated Limit Values (ELVs) established by ACGIH will be applied as a basis for mitigating actions. In addition, the Idaho Fugitive Dust Control requirements are action-specific ARARs that will be met by controlling sources of construction-related fugitive dust.

Other ARARs addressed by the remedial design include state requirements governing entry to areas of treatment, storage, or disposal of wastes. Pertinent aspects of these ARARs will be substantively achieved through construction of controls to restrict unintentional or unauthorized entry to active areas of the closure during implementation of the remedial design. Closure requirements for protectiveness will be substantively achieved through the closure design and implementation of institutional controls.

## 2.2 EVALUATION OF CLOSURE OF GYPSUM POND A-4

As stated in the 1992 ROD, Gypsum Pond A-4 may be closed either by: 1) removal of the gypsum material and restoration of the original site, or 2) closure of the impoundment in place. The final determination regarding remediation of the Gypsum Pond A-4 area is based on the engineering feasibility of closing the impoundment in place and additional consideration of ground-water and surface-water hydrology in the area. The following sub-

sections present a characterization of the impounded gypsum and demonstrate that in-place closure of the A-4 facility is feasible, effective, and will not result in adverse hydrologic effects.

#### 2.2.1 Characterization of Gypsum Pond A-4

Gypsum Pond A-4 was investigated during the RI as part of Task 8.0, Bunker Hill Smelter Complex Investigations. The RI was supplemented in July 1993, with the excavation of a number of test pits in the impounded gypsum, to investigate the geotechnical characteristics of the material and the possible causes of localized solution cavities and sink holes in the material.

##### 2.2.1.1 Solid Materials

RI field activities associated with Gypsum Pond A-4 included collection of solid samples from the impounded gypsum and the embankments. These samples were analyzed to assess physical characteristics, common chemical constituents and trace metals in the gypsum. As shown in the table below, analytical results for the collected samples, along with comparative analytical results for samples of materials collected from other areas, indicate that the gypsum is very low in metals content relative to other materials at the Bunker Hill Site and, therefore, does not represent a significant potential source of metals loading to Site media.

Surface samples from Gypsum Pond A-4 indicate a mix of gypsum, runoff sediments, deposited fugitive dusts from metals mining and smelting, and mine waste rock (placed as a protective cap). The sediments, fugitive dusts, and waste rock are responsible for elevated lead concentrations in the upper foot of the impounded material. In addition, the interior of the impounded gypsum may include small amounts of fugitive dusts deposited during placement of the gypsum.

Table 1

RI Site ID	Location	Material Description	Arsenic (mg/kg)	Cadmium (mg/kg)	Lead (mg/kg)	Zinc (mg/kg)
2-7-A4	Gypsum Pond A-4	0-12" gypsum, with some sediments and gravel (mine waste rock)	188	89.4	9330	2320
21-7-A4	Gypsum Pond A-4	-200 (fine sieve); 0-1" gypsum, with some sediments and gravel (mine waste rock)	24.5	94.3	19000	3330
GR-51	Gypsum Pond A-4	0-37' borehole in gypsum	<4.8	5.4	39.7	33.6
GR-06U	CIA Gypsum Pond A-5	0-7.9', gypsum 7.9'-16.0', gypsum 16.0'-26.0', gypsum	<4.8 <4.8 <4.8	5.8 3.5 6.9	17.5 49.9 74.8	19.9 42.8 216
GR-09U	CIA Gypsum Pond A-5	7.3'-16.5', gypsum	<4.8	5.2	128	123
GR-45	CIA Gypsum Pond A-5	5.8'-16.5', gypsum	<4.8	5.4	97.9	47.4
6 sites	CIA Tailings (East Cell)	19 samples from 6 boreholes in flotation tailings	106-681	6.1-40.0	353-7760	624-7990
2-7-2	To west of Gypsum Pond A-4	Misc. surficial materials and soils	6160	1870	76900	39700
10 sites	Smelterville Flats	-200 (fine sieve); surface materials/soils	45.9 - 504	8.99 - 78.2	2930 - 22600	1240 - 15600

#### 2.2.1.2 Groundwater

Borehole GR-51, located in the north-central region of the A-4 impoundment, was completed through the gypsum to assess the thickness of the impounded material and to investigate the presence of groundwater within or below the impounded gypsum. The borehole penetrated approximately 37 feet of gypsum before encountering a layer of organic material, approximately two to three feet thick, which was interpreted to be the original soil surface of the valley floor prior to deposition of gypsum in the impoundment. The organic soil layer and a limited thickness of the gypsum immediately overlying this soil were found to be saturated. No monitoring well was completed in the borehole and, therefore, no groundwater samples have been collected from the gypsum deposits in

the A-4 impoundment. Several groundwater samples were collected from wells installed in the A-5 impoundment, located in the CIA middle cell, and these offer some indication of the potential impact to groundwater from the A-4 materials.

The gypsum deposits in both the A-4 and A-5 impoundments were generated by the same facility, using the same process. However, as shown in the table above, metal concentrations for subsurface gypsum samples collected from the A-5 impoundment are generally higher than those for A-4 material. Therefore, it is reasonable to conclude that analytical data for groundwater samples collected from the A-5 impoundment present a conservatively high estimate of metal concentrations that might potentially be found if groundwater samples were collected from the A-4 impoundment. Results of the groundwater analyses for Gypsum Pond A-5 and other representative areas of the Site, are presented for comparison in the table below.

Table 2

RI Site ID	Location	Material Description	Arsenic (mg/l)	Cadmium (mg/l)	Lead (mg/l)	Zinc (mg/l)
GR-06 G (4 samples)	CIA Middle Cell (A-5)	Water in gypsum *	0.065 - 0.257	1.02 - 1.47	0.186 - 0.565	7.43 - 9.14
GR-06 T (3 samples)	CIA Middle Cell (A-5)	Groundwater in tailings beneath the gypsum	0.006 - 0.018	0.009 - 0.026	0.011 - 0.183	1.92 - 5.67
GR-11 T (12 samples)	CIA East Cell	Groundwater in tailings	0.139 - 0.274	<0.004 - 0.069	0.095 - 0.739	21.7 - 28.3
GR-27 (4 samples)	Smelterville Flats (Valley floor)	Upper zone groundwater	<0.005	0.201 - 0.286	<0.001 - 0.006	35.7 - 47.7
MCLs			0.05	0.005	0.015	---
MCLGs			---	0.005	zero	---
Water Quality Criteria			0.05	0.010	0.05	---

\* Values presented for water in gypsum are higher than would be expected, due to the low metals content of the gypsum. The metal concentrations presented may be influenced by the presence of other materials in adjacent areas.

A groundwater loading analysis, conducted as part of the Bunker Hill RI/FS, indicated that Gypsum Pond A-4 potentially

contributes approximately 0.356 lbs/day to the total combined metals loading of 987 lbs/day (sum of arsenic, cadmium, cobalt, lead, and zinc loadings) estimated to enter the groundwater system of the SFCDR valley (MFG, 1992c). Comparative loading contributions from other areas of the Site are shown in the table below. These loading estimates indicate that the gypsum does not comprise a significant source of metals or metalloids (e.g., arsenic, cadmium, lead, or zinc) at the Bunker Hill Site.

Table 3

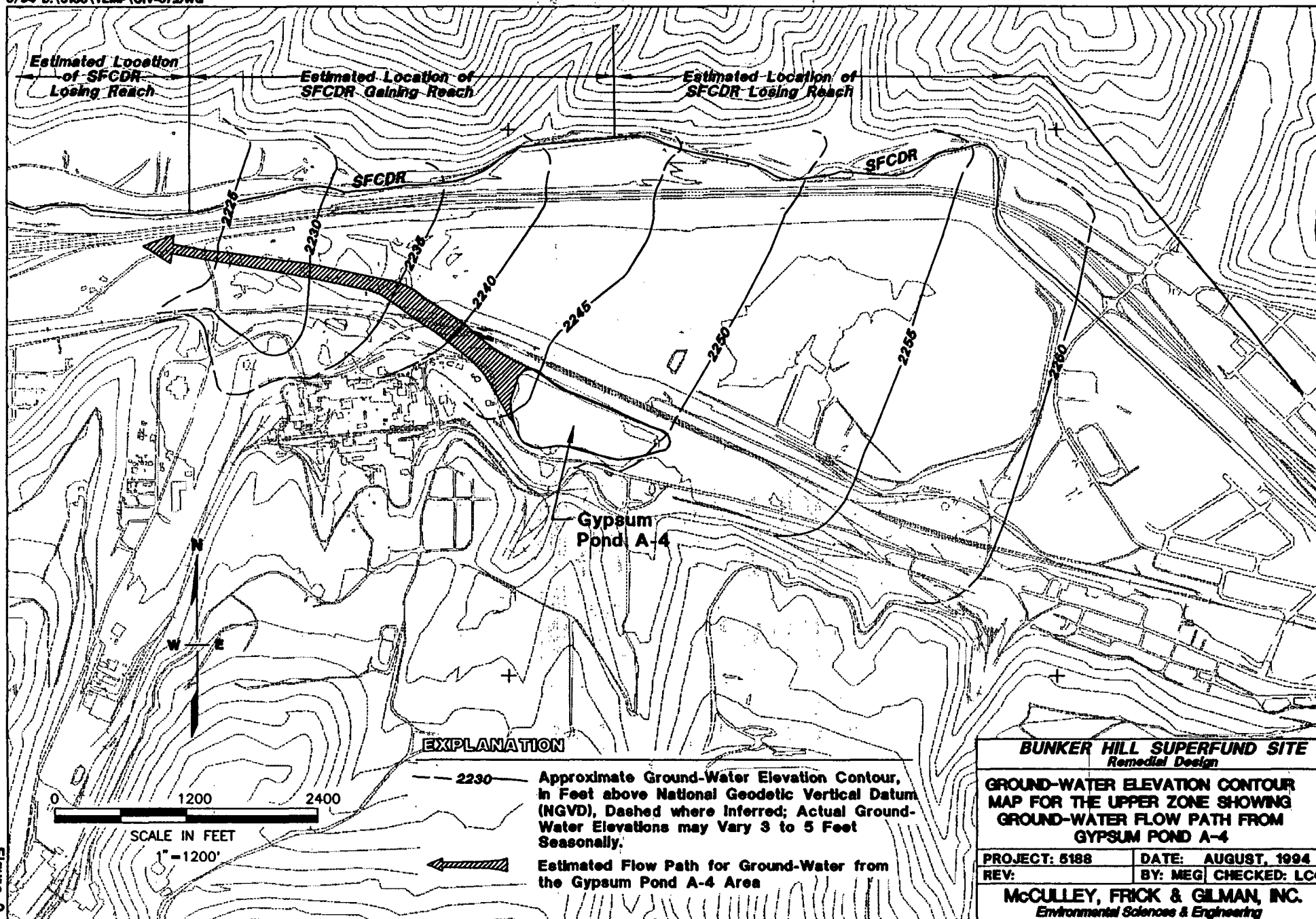
Site Location	Low-Flow Conditions Combined Metal Loading (lb/day)
Gypsum Pond A-4 *	0.356
CIA Middle Cell (A-5, gypsum over tailings)	1.72
CIA East Cell (tailings)	590
Jig Tailings (Valley floor, Smelterville Flats portion of SFCDR)	68.1

\* Values presented for groundwater in Gypsum Pond A-4 are based on the "groundwater in gypsum" metal concentrations for the CIA middle cell, presented above. The estimate of combined metal loading for Gypsum Pond A-4 is considered to be conservative because A-4 does not have the same potential groundwater influences as Gypsum Pond A-5 (CIA middle cell).

A groundwater elevation contour map for the upper zone (Figure 2-1) indicates that any groundwater flow originating in the vicinity of the A-4 impoundment would not likely enter the SFCDR in its gaining reach near the mouth of Government Gulch. Rather, such flow would likely proceed down valley and would probably be drawn into the wetland system designed to capture and treat groundwater flows, prior to such flows entering the river. This proposed system is currently under evaluation by the Agency.

#### 2.2.1.3 Surface Water

Data from the RI indicate that the Gypsum Pond A-4 impoundment is not a significant source of metals to adjacent surface waters in Bunker Creek (MFG, 1992a).





#### 2.2.1.4 Air Transport

Data from the RI indicate that Gypsum Pond A-4 is not a major source of airborne contamination at the Bunker Hill site, particularly when compared to other potential source areas such as the CIA and Smelterville Flats. Table 4 below, which summarizes estimated emission rates for total suspended particulate (TSP), arsenic, cadmium, and lead, developed as part of Task 4.0 of the RI (TRC, 1992), shows that, despite elevated lead concentrations in surface samples, the dusts which comprise the surface layer of the gypsum do not contribute a significant loading of the metals and metalloids of concern. The emission rates estimated for Gypsum Pond A-4 are reflective of the historic deposition of sediments and fugitive dusts, along with mine waste rock (placed as a protective cap), on the gypsum surface. Furthermore, the impoundment is in a location that is relatively protected from the prevailing winds in the valley.

Table 4

RI Site Source ID	Location	TSP (tons/year)	Arsenic (lb/year)	Cadmium (lb/year)	Lead (lb/year)
U54	Gypsum Pond A-4	1.2	1.30	0.43	144.6
U70	CIA Middle Cell (gypsum)	54.3	20.41	2.61	234.8
U69a	CIA East Cell (tailings, beaches)	96.1	172.14	5.00	211.7
U61	Smelterville Flats, Airport Area (Valley floor)	322.5	134.80	32.89	10296.0

#### 2.2.1.5 Geotechnical

The existing Gypsum Pond A-4 embankment extends approximately 1,550 feet across the original mouth of Magnet Gulch. It is approximately 40 to 45 feet in height and the downstream face is at a slope of approximately 1.2:1 to 1.3:1. The crest width varies from approximately 20 to 50 feet. The eastern portion of the

embankment includes a sloped bench or ramp and a drainage channel on the downstream face. This channel conveys Deadwood Gulch flows to Bunker Creek. Ground-water seeps are evident in several locations along the downstream toe of the embankment. At the eastern end of the embankment (approximately 600 feet) the upper stage of the structure shows evidence of longitudinal cracking and surface displacement, approximately 15 feet from the upstream edge of the crest.

Two borings were completed in November 1992 through the A-4 embankment; one in the western portion (BA4-1 in Geotechnical Report) and one in the eastern portion (BA4-2 in Geotechnical Report). The western boring encountered approximately 46 feet of dense to very dense silty to sandy gravel, overlying approximately six feet of moist stiff gypsum, overlying the natural subgrade consisting of approximately two feet of compressed organic-rich silty to sandy soils, overlying approximately three to four feet of stiff to very stiff sandy silt, overlying approximately two feet of very dense sandy gravel. Auger refusal was reached at approximately 60 feet below grade, or eight feet below the bottom of the gypsum. Ground water was encountered at approximately 56.5 feet below grade, in the sandy silt layer beneath the embankment. The eastern embankment boring encountered approximately 38 feet of medium dense to dense silty to clayey gravel and sand, overlying approximately 20 feet of very dense silty sand and gravel. Groundwater was encountered at approximately 47.5 feet below the embankment crest, which is below the base of the embankment. Drill rig access to the area of surface displacement was not feasible because of very wet surface conditions at the time the borings were done.

Penetration resistance data suggest that the in-place relative densities of the gravelly waste rock materials in the A-4 embankment are generally in the range of 65 to 70 percent or greater. Gravelly materials with an in-place relative density of at least 60 percent are considered to have adequate shear strength and satisfactory consolidation properties for civil engineering

structures of this nature (USBR, 1974). Furthermore, the laboratory data indicate that the in-place density of the silty gravel waste rock embankment materials is generally at least 80 percent of the maximum dry density as determined by the Modified Proctor Test. Therefore, the integrity of the majority of existing embankment materials is acceptable.

An area of exception is in the eastern portion of the upper stage of the embankment, where a pocket of soft, black, silty material was uncovered during excavation of the test pits. This material demonstrated very low shear and compressive strengths and will have to be removed and replaced with competent material as part of the upgrading program for the embankment.

Additional information concerning the conditions in the eastern portion of the A-4 embankment and the geotechnical characteristics of the gypsum in the A-4 impoundment was necessary to allow proper assessment of the closure plan for the facility. Consequently, in July 1993 a total of four test pits were excavated into an area of the upstream portion of the A-4 embankment and into the gypsum within the impoundment. Samples of the excavated materials were collected and subjected to field moisture-density tests and laboratory analyses.

The two test pits excavated into the upper portion of the upstream face of the A-4 embankment were located respectively in the area of longitudinal surface cracking and displacement in the eastern embankment, approximately 50 feet east of the previous boring (BA4-2), and approximately 350 feet to the west, in an area of the embankment that shows no signs of surface cracking or displacement. The test pit in the eastern embankment was excavated to a depth of approximately 21 feet, through medium dense silty sand and gravel (mine waste rock) material and stiff to very hard gypsum (with thin layers, less than 0.25 inch, of black silty material), which extended approximately 12 to 15 feet into the upstream portion of the embankment. It is apparent that the gypsum material was deposited hydraulically from the upstream crest of the

embankment, and the embankment appears to have been constructed in stages by the upstream method, resulting in subsequent stages of the embankment being founded partially on impounded gypsum. In the area of surface cracking and subsidence, a zone of wet, soft, black silty material was encountered, at a depth of approximately 10 to 14 feet below the crest of the embankment. The unconfined compressive strength of this material is estimated to be less than 0.5 tsf. The origin of this soft material is unknown, however, it is speculated that it may have resulted from a blowdown (or cleanout) of process equipment and discharge of residue through the gypsum tailings line. Because of its apparently very low in-place shear and compressive strengths, this material is considered to be the primary cause of the embankment distress in this area. The test pit excavated in the western portion of the embankment was extended to a depth of approximately 25 feet and encountered dense to very dense silty sand and gravel (mine waste rock) material, with hard to very hard gypsum beneath the upstream toe. Unlike the eastern embankment, no evidence of gypsum or the soft, black silty material was encountered within the upper embankment in the western test pit.

A limited and ongoing survey program was initiated to monitor any continued movement of the eastern region of the embankment. This program includes periodic surveying of settlement plates placed at several appropriate locations along the crest of the embankment. Any movement of these devices is measured relative to a new benchmark, located in stable, undisturbed ground.

The test pits excavated into the A-4 gypsum indicated that much of the material is indurated or cemented, with in-place densities of the material ranging from approximately 85 to 90 percent of the maximum dry density (MDD) determined by the Standard Proctor Test. The material in Gypsum Pond A-4 was placed hydraulically and these densities are consistent with that method of placement. The density and hardness of the materials increased with depth and the only indication of significant voids was in the southern area of the impoundment, where water infiltration from the

south (under McKinley Avenue) was occurring at a rate estimated to be approximately 100 to 150 gpm and, to a lesser degree, in other localized areas where water had been allowed to pond on the surface. Pocket penetrometer tests showed unconfined compressive strengths of the gypsum in excess of 4.5 tons per square foot (TSF). The observations and data collected through excavation of these test pits indicate that the gypsum material will provide a competent foundation for placement of grading fill and a vegetated cover over the area.

Consolidation test data for gypsum samples collected from Gypsum Pond A-4 are generally consistent with previous data developed for gypsum from Gypsum Pond A-5 (Dames & Moore, 1988). These data indicate that the total consolidation of the gypsum in the A-4 impoundment, including both primary consolidation and secondary compression (or creep consolidation), under the loads that would be expected due to placement of a grading fill and cover layer, will be a maximum of approximately 2 to 3.5 percent of the existing deposit thickness. Such consolidation would result in maximum anticipated surface settlements of approximately 8 inches.

Seismic refraction surveys were performed on a grid extending through the Gypsum Pond A-4 area (see Geotechnical Report). The data from these surveys were generally difficult to interpret due to the unique behavior of the compressional waves within the gypsum material. Consequently, it was not possible to use this technique effectively to detect the potential presence of voids within the gypsum. In some areas, the refraction surveys exhibited high velocities (in excess of 5,000 fps) relatively near the surface of the gypsum, possibly indicating the indurated state of the gypsum material (see Geotechnical Report). The seismic data did indicate that the depth to bedrock is approximately 40 to 60 feet beneath the surface of the gypsum in the impoundment; the natural subgrade soils could be reasonably well discerned from the data. Calibrating this seismic data against information from the previous RI boring through the impounded gypsum (GR-51), it is estimated that the gypsum thickness varies from approximately 10 to 15 feet

in the southern region to approximately 37 feet near the north embankment. The underlying bedrock surface appears to be approximately 10 to 30 feet below the original ground surface in the impoundment area.

The medium to very dense sand, silt and gravel embankment material, overlying the consolidated, stiff silt, sand and gravel subgrade materials, are structurally suitable to provide a stable embankment. The final configuration of the embankment will be approximately 8 to 10 feet lower than the existing embankment and, therefore, loads on the subgrade will be reduced by approximately 20 percent. To ensure the integrity of the entire embankment, the zone of soft material in the eastern portion of the embankment must be removed and replaced with competent material.

Further discussions and evaluation of the geotechnical investigations conducted at Gypsum Pond A-4 are presented in the Technical Memorandum: Geotechnical Investigations for Bunker Hill Superfund Site Remedial Design, June 1994.

As stated in Section 1.1, in preparation for development of final designs for the A-4 closure, further geotechnical investigations will be conducted in key areas of the closure site, including the existing embankment and along the alignment of the drainage channel. These geotechnical investigations will involve installation of additional borings and collection of appropriate data to supplement the data obtained from previous work. The supplemental borings will be located in areas where signs of distress are evident and in areas that are expected to be representative of subsurface conditions.

#### 2.2.2 Closure-in-Place of Gypsum Pond A-4

This remedy would involve regrading and contouring of the existing impoundment surface; lowering and stabilization of the existing embankment; placement and grading of a fill layer over the impounded gypsum; placement and vegetation of a cover layer; and

construction of new drainage channels and appurtenant facilities to convey surface water discharges from Magnet and Deadwood gulches to Bunker Creek.

The advantages of this remedial alternative include the fact that it would avoid aggravation of possible settlement-causing conditions at the A-5 impoundment; it would permit more expeditious final closure of both the A-4 and A-5 facilities, thereby advancing the mitigation of potential contaminant loadings from both sources; and it would result in significantly lower costs for remediation of the A-4 facility.

Concerns expressed regarding the long-term stability of the gypsum in the impoundment are a consequence of the present lack of provisions to control infiltration to the area. Placement of a properly designed and constructed cover over the closure area, and improvements to the stormwater management works upstream of the A-4 impoundment, will substantially reduce infiltration to the gypsum and, thereby reduce the means for mobilization of contaminants. The vegetated cover will be similar to that envisioned for other closure areas of the Bunker Hill Site; specifically, a minimum 6-inch layer of approved growth medium or topsoil, planted with grasses appropriate for the Bunker Hill area. Based upon the data presented in the "RI/FS Technical Memorandum: Evaluation of Proposed CIA and Page Pond Closure" (MFG, 1992a), the graded and vegetated cap is expected to reduce infiltration of incident precipitation into the gypsum at the A-4 impoundment by at least 50 percent, through increased runoff and evapotranspiration. Upstream improvements to surface water management facilities will significantly reduce or eliminate percolation of flow into the closure area from Magnet Gulch, which is the major detrimental impact to the gypsum in the A-4 impoundment. Construction of a secure, lined channel around the edge of the closed impoundment will convey Magnet Gulch flows safely past the closure to Bunker Creek. The engineering and construction requirements of such a closure are readily achievable (see Section 3.0). Therefore, in-place closure of the A-4 facility is expected to satisfy the

objective of reducing or eliminating contaminant migration from the gypsum to ground water, surface water and air.

## 2.3 EVALUATION OF A-4 EMBANKMENT STABILITY

### 2.3.1 Geologic Faults and Seismicity

Idaho regulations require that the stability of impounding embankments be evaluated and that the factors of safety be at least 1.5 for static loads and at least 1.0 for combined static and appropriate earthquake loads. Slope stability analyses have been performed as part of the design of modifications for the embankments based upon strength data obtained from the geotechnical investigations of the existing embankments and considering the nature of the material impounded at the A-4 facility, the anticipated use of the closed facility and the possible impact of an embankment failure on downstream areas.

Major faults in the vicinity of the Bunker Hill Site include the Osburn and Kellogg Faults. These faults generally trend east-west or northwest-southeast. Based on geologic maps presented by Gott and Cathrall (1980), the inferred trace of the Kellogg Fault generally passes between the CIA and the north embankment of Gypsum Pond A-4, and may pass near or beneath the southwest corner of the CIA Middle Cell. The Kellogg fault has had substantial vertical displacement, with the north side upthrown. The trace of the Osburn Fault trends east-west through the Zinc Plant area. It is possible that the Kellogg Fault is a split from the Osburn Fault. Hobbs, et al. (1965) report that the Osburn Fault has over 16 miles of right-lateral displacement and that the majority of movement occurred between *Cretaceous* and *Miocene* times, about 100 to 25 million years before present (mybp). The lower zone alluvium may be as old as middle Tertiary (about 35 mybp) (Norton, 1980). The ages of the confining and upper zones are likely Pleistocene or younger (less than 2 mybp) because the confining-zone sediments were apparently deposited in a lake dammed by glacial ice (Norton, 1980). Thus, there may have been some overlap between fault



movement and deposition of lower zone materials. It is unknown if faulting has disrupted lower zone alluvium; however, sediments comprising the confining and upper zones are apparently undisturbed by tectonic activity. Therefore, it appears that no appreciable fault movement has occurred in the site area during the Holocene period (during the last 20,000 years) and possibly as long as 2 million years.

Differences in seismic hazards at specific sites may be attributed to local lithologies, proximity to active faults, and potential slope stability problems. The likelihood of seismic events are considered to be consistent across the Bunker Hill Site. The seismic zone for this site is classified in the Uniform Building Code as 2B (UBC, 1988), which is indicative of minor to moderate seismic activity. Maximum probable horizontal accelerations in rock, due to seismic events with a recurrence interval not exceeding once in 250 years, have been estimated for areas of the contiguous United States (Algermissen, et al., 1982). The maximum horizontal acceleration for the Bunker Hill area is from 0.06 to 0.10 times the acceleration of gravity.

Furthermore, data was obtained from the National Earthquake Information Center (NEIC) of the United States Geological Survey (USGS, 1993) regarding historic seismic events within a 200-kilometer (km or 125 mile) radius of the Bunker Hill Site. The NEIC data base system utilizes a number of data source catalogs from North America which record seismic events from the year 1500 to the present, as well as information from its own measuring equipment. The available data include the date, location, depth, intensity and magnitude of earthquakes in the vicinity of the site from 1906 to the present. The maximum seismic event in the area occurred in 1942, had a Richter magnitude of 5.5 and an epicenter approximately 65 km (40 mi) northwest of the Site. The maximum seismic events occurred in 1926 and 1957, approximately 14 km (9 mi) east of the Site, and each had a magnitude of 5.0. All of these events were estimated to have occurred at a depth within 0 to 5 km of the ground surface. A magnitude 5.0 event is assumed to be

the largest seismic event that would be expected occur at the Bunker Hill Site. Such a seismic event could produce a maximum horizontal ground acceleration of approximately 0.05 to 0.09 times the acceleration of gravity (g) (Richter, 1958 and Housner, 1977). Therefore, for purposes of evaluating the stability of the upgraded A-4 embankment under seismic loadings, it is conservatively assumed that the maximum design horizontal coefficient of acceleration will be 0.10g and the maximum vertical coefficient of acceleration will be 0.06g. The stability analysis conservatively applies the maximum horizontal coefficient of acceleration (0.10g) in combination with one-third of the maximum vertical coefficient (0.02g).

### 2.3.2 Modified A-4 Embankment Stability Analyses

The State of Idaho Rules and Regulations for Mine Tailings Impoundment Structures (1980) require that downstream (outside) slopes of embankments be 2:1 or flatter. The US Bureau of Reclamation (USBR, 1974) also recommends downstream slopes of 2:1 for small, modified-homogenous dams constructed of clayey to silty gravel or clayey to silty sand. Based on these guidelines, upgrading of the A-4 embankment will include modification of all slopes steeper than 2:1, such that a final closure slope of 2:1 or flatter is produced.

Slope stability analyses of the proposed modified embankment were performed using a final embankment height of approximately 35 to 36 feet and a 2:1 downstream slope. The analyses were done using the computer program "PCSTABL5M" (Purdue University, 1988). The methodologies on which this program is based are the simplified Bishop Method, which is applicable to circular shaped failure surfaces, and the Janbu Method, which is applicable to failure surfaces of general shape. A triaxial consolidated, undrained test with pore pressure measurements was performed on a sample of silty gravel waste rock material with some clayey material obtained from the A-4 embankment. This sample was remolded in the laboratory to 90 percent of the maximum dry density as determined by the Modified

Proctor Test (ASTM D-1557) to simulate the characteristics of material that will be compacted at the downstream toe of the A-4 embankment. This triaxial test indicated an effective friction angle of 38.9 degrees and a cohesion of 326 pounds per square foot (psf). Because the material in portions of the existing embankment may not achieve this strength, analyses were also performed using lower strength parameters, previously developed for analysis of waste rock materials in the CIA embankments (see CIA Closure RDR). Other material parameters were obtained either from previous work at the site or from published data (Navfac, 1971 and USBR, 1974). The stability analyses performed for the modified A-4 embankment assume that the wet, soft, black, silty material encountered in the test pit in the eastern portion of the embankment will be removed and replaced with acceptable compacted silty sand to gravel material. The material input parameters for effective stress used in the analyses are presented in the following table:

Material Parameters for A-4 Embankment

Soil Type	Moist unit weight (pcf)	Saturated unit weight (pcf)	Cohesion (psf)	Friction Angle (deg)
GM- to GM/GC (Waste rock, dam fill)	115	130	260 to 326	36 to 38
SM	115	125	100 to 290	31 to 33
ML (gyp)	80	90	210	39
ML (soil)	100	120	300	32
OL-ML (subgrade)	85	100	50	5 to 25

To adequately reflect the somewhat different embankment and subgrade conditions encountered in the borings drilled through the eastern and western embankment sections, separate stability analyses were performed for each of these sections. Reflecting the fact that groundwater was encountered beneath the base of the embankment in each boring, piezometric surfaces were defined as being below the embankments for the stability analyses. Two

general cases for slope stability of the modified A-4 embankment were analyzed including:

1. Static analysis of each embankment section, using the effective stress parameters; and
2. Pseudo-static (seismic) analysis of each embankment section using the maximum horizontal seismic coefficient in combination with one-third of the maximum vertical seismic coefficient, as described previously, and the effective stress parameters for the materials.

The computed minimum factors of safety for the respective embankment sections are presented in the following table:

Summary of Minimum Factors of Safety for Modified A-4 Embankment

Location	Bishop Method		Janbu Method	
	Seismic	Static	Seismic	Static
East Embankment	1.5	1.9	1.5	1.9
West Embankment	1.5	1.9	1.4	1.8

As may be seen from the table, the minimum static factors of safety, using the worst case soil strength parameters, are above the recommended value of 1.5 and the minimum seismic factors of safety are all above the recommended value of 1.0. Therefore, it can be concluded that the proposed closure embankment, with a downstream face slope of 2:1 or flatter, will provide acceptable long-term stability.

#### 2.4 PRELIMINARY SETTLEMENT ESTIMATES

Based upon consolidation tests performed on gypsum samples collected during the RI (Dames & Moore, 1988), a preliminary estimate of potential settlement was made for the closed-in-place gypsum in the A-4 facility. The maximum depth of gypsum is approximately 37 feet in the north central region of the

impoundment and the estimated maximum depth of gypsum near the southern edge of the impoundment is approximately 10 to 15 feet.

Total settlement of a soil or other material, such as tailings or gypsum, is a combination of three phenomena: 1) immediate or distortion settlement, which occurs primarily as the result of distortion within the foundation soils; 2) primary consolidation settlement, which occurs as water is expelled from the voids of the subject material; and 3) secondary compression (creep consolidation), which occurs as the material skeleton itself yields and compresses (Winterkorn & Fang, 1975). Because the foundation soils beneath Gypsum Pond A-4 have been effectively pre-loaded for many years, and based upon experience with other tailing disposal facilities; settlement at the A-4 closure is expected to occur as a result of primary consolidation.

If the final closure surface is graded to achieve a slope of approximately two percent from south to north (the direction of the natural valley slope in this area), the maximum depth of fill overlying the existing gypsum in the southern region of the impoundment will be approximately six to eight feet. This depth of fill will result in applied soil pressures of approximately 900 to 1,000 psf. Under such pressures, initial or primary consolidation in the gypsum may range from approximately 0.02 to 0.03 inches/inch. Using these data, neglecting distortion of the subgrade materials, assuming some preconsolidation has occurred within the gypsum (the facility is more than 20 years old), and conservatively assuming that the long-term creep consolidation of gypsum will be approximately the same as the initial consolidation, the range of maximum anticipated surface settlements in the southern region of the impoundment is estimated to be approximately five to nine inches. In the central region of the impoundment, where the gypsum depth is estimated to be approximately 25 feet, the depth of applied grading fill should be approximately three to four feet, resulting in applied soil pressures of up to 500 psf. Such applied pressures may produce a consolidation rate of 0.01 to 0.02 inches/inch, resulting in maximum surface settlements also in

the range from six to twelve inches. The assumption that creep consolidation will equal the primary consolidation is considered to be very conservative, based upon both laboratory data (Dames & Moore, 1988) and field experience. Such experience indicates that gypsum materials exhibit cementation so that actual long-term creep consolidation problems in the field are minimized, if sources of water infiltration are controlled (see Preliminary Geotechnical Review, G. Toland, May 27, 1993, Appendix A). Test pits excavated in the gypsum verify that much of the gypsum in Gypsum Pond A-4 is in a hardened, cemented state, especially at depth. Consequently, actual surface settlements are expected to be significantly less than these maximum estimates.

Because there will be virtually no additional load applied to gypsum in the northern region of the impoundment (where the depth of gypsum is the greatest), no significant additional settlement is expected in this area. Furthermore, by placing only a nominal thickness of grading fill material adjacent to the existing embankment (as well as reducing the height of this embankment, as discussed in section 2.5), the stability of this embankment will be improved.

Test pits at Gypsum Pond A-4 indicate that a layer of softer, silty, non-gypsum material, with some organics, overlies the gypsum. This layer, which is up to two feet thick in places, may exhibit more settlement potential than the underlying gypsum. However, because this layer is relatively thin, it is not expected to produce significant settlement beyond that which is estimated for the gypsum materials. In the southern portion of the facility, where this surficial material may be thicker and where regrading loads may be higher, consideration may be given to removing or compacting this material, prior to placement of fill material, to limit potential settlement.

Periodic surveys of the closure surface will be conducted to monitor settlement at various locations during construction and for a period of time after completion of the closure activities. Such

monitoring will allow an assessment of potential regrading that may be required to mitigate localized differential settlement and ensure that areas of ponding and potential infiltration do not develop.

## 2.5. EVALUATION OF DRAINAGE AND HYDRAULIC CONTROLS

Magnet Gulch drains an area of approximately 290 acres from the hillside headwaters to McKinley Pond. The total area of the original drainage basin, including Gypsum Pond A-4 and assuming free drainage beneath McKinley Avenue, is approximately 310 acres. Approximately 145 acres of this total area is upstream of the existing Gypsum Pond A-1. The length of the longest watercourse, from the top of the drainage basin to McKinley Pond, is approximately 7,000 feet and the average overall basin gradient is approximately 22 percent.

Under the anticipated remediation program for Magnet Gulch, the flow conditions within the drainage basin will be simplified and restored more closely to the original flow paths. This will involve the removal of intermediate upstream diversion channels, stormwater and sediment detention structures including the A-1 embankment and gabion dams, bypass pipelines and tunnels, the mine waste rock fill area and the highline railroad embankment, as well as regrading of the area and construction of appropriate channels to safely convey storm flows to McKinley Pond and the culvert inlet under McKinley Avenue. Using the Rational Formula ( $Q=CIA$ ), with a maximum rainfall intensity ( $I$ ) of 2.43 in./hr. for an estimated time of concentration of approximately 12.3 minutes, a conservative runoff coefficient ( $C$ ) of 0.35 for the relatively steep hillsides, and a total drainage basin area ( $A$ ) of 290 acres, the peak flow ( $Q$ ) approaching McKinley Pond from the 100-year, 24-hour storm event is estimated to be approximately 247 cfs ( $0.35 \times 2.43 \times 290$ ). After removal of the A-1 embankment from upper Magnet Gulch, as proposed by the Agency as part of the remedy for that area, there will be no attenuation of runoff flows. The culvert under McKinley Avenue, and the channel facilities to carry the flow safely past the Gypsum

Pond A-4 closure to Bunker Creek will be designed to accommodate the peak design flow, as reviewed and approved by the Agency, and resist the erosive forces of such a flow.

The Rational Formula is considered to be suitable and is often used for assessment of drainage areas of up to one square mile, particularly where site characteristics are relatively consistent throughout. The Rational Formula typically provides a conservative estimate of expected flows, compared to other hydrologic models. Further hydrologic analysis of the tributary watersheds will be conducted, as part of the final design process, when details of proposed upstream remedial actions are defined.

Various erosion control measures, including the installation of small check dams and/or erosion control mats, may be required in the remediated areas upstream of the A-4 closure to avoid exacerbating O&M requirements in the downstream culvert and channel. The specific need and appropriate locations for such upstream erosion control measures should be part of the remedial design for that area. A preliminary drainage plan showing anticipated remedial actions in Magnet Gulch is presented in Figure 2-2.

Flows from Deadwood Gulch currently discharge along the east side of the A-4 impoundment, then flow westward in a channel that is effectively perched on the downstream face of the eastern portion of the A-4 embankment, and finally discharge northward to Bunker Creek. Deadwood Gulch drains an area of approximately 770 acres. The length of the longest watercourse in the drainage basin is approximately 14,300 feet and the average basin gradient is approximately 20 percent. The estimated time of concentration, accounting for the attenuating effect of the two existing gabion dams in Deadwood Gulch, is approximately 45 minutes and the corresponding maximum rainfall intensity is approximately 1.25 in./hr. Using a conservative runoff coefficient of 0.30, the peak flow at the mouth of Deadwood Gulch, resulting from the 100-year, 24-hour storm event, is estimated to be approximately 289 cfs (0.30



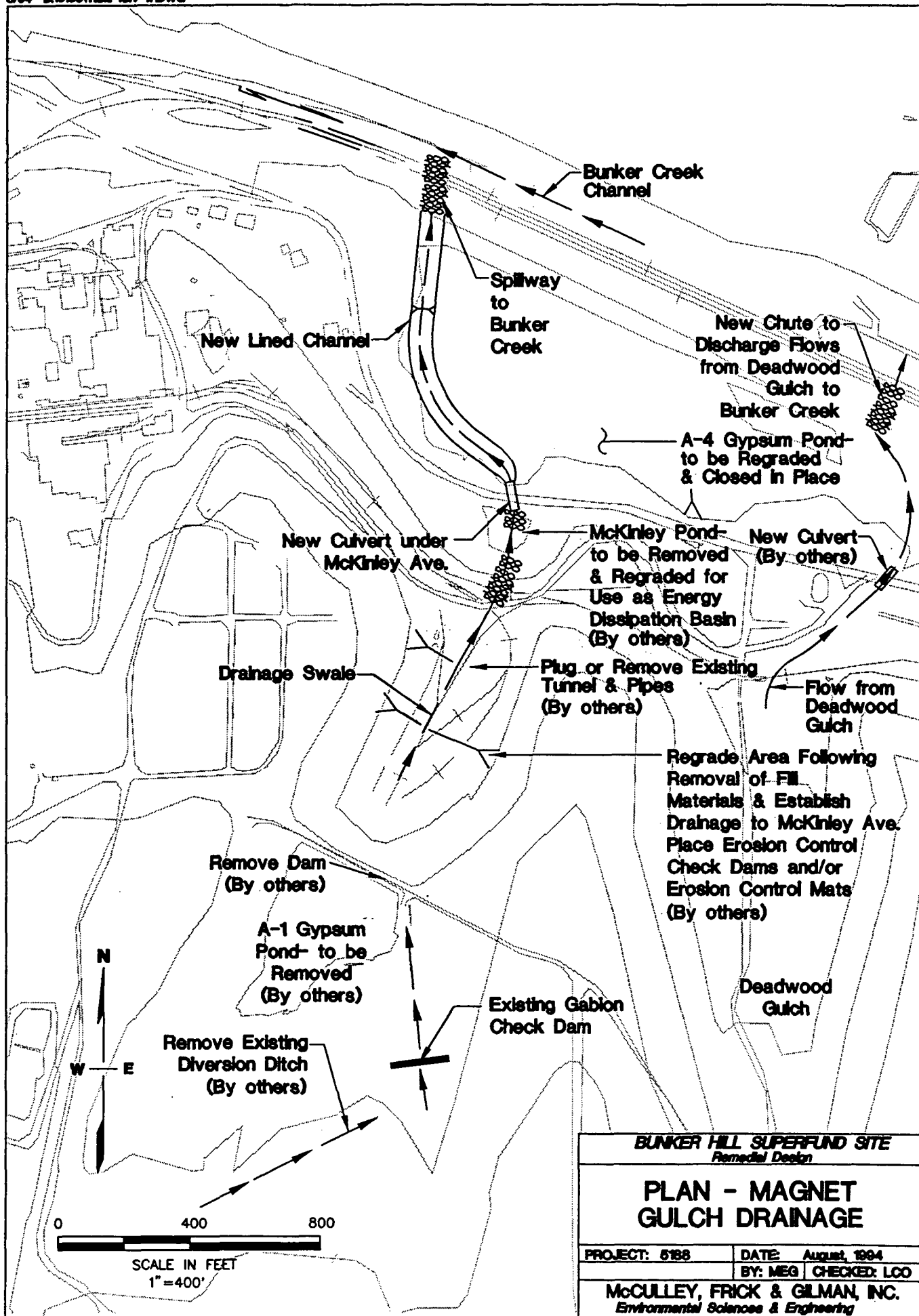


Figure 2-2

x 1.25 x 770). Based upon the SCS hydrograph method, with a curve number of 68, the peak flow is estimated to be approximately 280 cfs. Culvert and channel improvements from McKinley Avenue to Bunker Creek will be designed to accommodate a peak design flow, as reviewed and approved by the Agency.

## 2.6 EROSION POTENTIAL

The potential for erosion due to surface-water runoff at the Gypsum Pond A-4 closure area was estimated, using the Universal Soil Loss Equation (USLE). This is a semi-empirical equation, developed originally by the Agricultural Research Service (Wischmeier and Smith, 1965), for predicting rainfall erosion losses from cropland east of the Rocky Mountains. It has since been modified and adapted for use in different regions of the United States (USDA, 1972), as well as for use in urban areas and at construction sites (Wischmeier et al., 1971, USEPA, 1973). The USLE takes into account factors affecting rainfall erosion, including climate, topography, soil type, vegetation, and installation of erosion control devices. The estimated annual soil loss from a site is calculated using the following equation:

$$A = RKLSCP$$

where:

A	=	the computed soil loss in tons (dry weight) per acre
R	=	the rainfall erosion index
K	=	the soil erodibility factor
LS	=	the combined slope length and gradient factor
C	=	cropping management (vegetation) factor
P	=	erosion control practice factor

The Soil Conservation Service (USDA, 1972) has established a relationship between the 2-year frequency, 6-hour duration rainfall and the average annual rainfall erosion index. Based upon a 2-year, 6-hour rainfall of 1.5 inches at the Site, the annual

rainfall erosion index (R) is approximately 70. Assuming a silty cover soil having approximately 80 to 90 percent silt, six to seven percent sand and approximately three to four percent organic matter with a moderate permeability, the soil erodibility factor (K) is estimated to be 0.35. Combined slope length and gradient factors (LS) can vary from approximately 0.1 for a 100-foot long slope at 0.5 percent to approximately 20 for a 2:1 slope on a 60-foot high embankment or cut slope. The LS values estimated for the closure surface and for the regraded downstream embankment face at the A-4 facility are 0.29 and 16, respectively. Cropping management or vegetation factors (C) can vary from approximately 0.01 for a well established 90 percent grass cover to 1.3 for a newly placed soil, graded with a bulldozer or scraper parallel to the fall line (Gray and Lieser, 1982). For the purposes of these analyses, it is assumed that a wood fiber slurry mulch, applied at a rate of 1,000 lb/acre (C = .05), small-grain straw mulch (C = .02) or an erosion blanket (C = .04) will be placed on the regraded embankment and final closure surfaces prior to vegetation establishment. Therefore, a C value of 0.05 was assumed to apply for the first year or two following closure, and a value of 0.01 was assumed to apply following vegetation establishment. The erosion control practice factor (P) can vary from 1.0, where no special treatment is applied, to a value of 0.25 where contouring or benching is implemented on a slope of two to seven percent. Structural erosion control devices, such as silt fences, hay-bale check dams and the like, can equate to a P value of 0.5 if used at a normal rate on a construction site, or 0.40 if used at a high rate (USEPA, 1973). The P factors were conservatively assumed to be 0.9 for the regraded embankment face and 1.0 for the closure surface on A-4.

Incorporating the above assumptions, it is estimated that approximately 50 tons of sediment  $[(70 \times 0.35 \times 0.29 \times 0.05 \times 1.0 \times 16.7 \text{ ac}) + (70 \times 0.35 \times 16 \times 0.05 \times 0.90 \times 2.5 \text{ ac})]$  may be eroded from the A-4 closure (16.7 ac) and A-4 embankment face (2.5 ac) each year during construction and for approximately one year following closure. Assuming a dry unit weight of sediment of approximately 80 pounds per cubic foot (pcf), an eroded sediment

volume of approximately 1,250 cf/yr may result. This equates to an average erosion depth of less than 0.02 inches over the closure area. Assuming vegetation is established on the cap and embankment slopes ( $c = 0.01$ ) by the second or third year following closure, the estimated sediment erosion rate will be reduced to approximately 10 tons  $[(0.01/0.05) \times 50]$  per year ( $=250$  cf/yr). This value represents an erosion rate of approximately 0.52 tons of sediment per acre per year (average eroded depth of 0.0036 inches over the surface area of the closure), which is well below the recommended maximum allowable rate of 2 tons/acre/year (USEPA, 1985).

During construction of the closure, temporary sediment control basins will be required to trap and remove sediment from closure area runoff, prior to discharge into adjacent existing waterways. Based on the expectation that these sediment control structures will be required for a construction period of only one year, the structures will be designed to retain the anticipated sediment loads while safely discharging the peak flow from the 2-year, 24-hour storm event. If the structures are required for more than one year, they will be designed to accommodate the 10-year, 24-hour storm.

### 3.0 DESIGN

This section presents a discussion of the closure design developed as part of this RDR, including the purpose of the particular components; the concept and rationale behind the design; significant features and/or limitations of the design; and work that remains to be done during the final design stage of the program. The discussion summarizes the current condition of the closure area, and how this area will be modified or remediated to satisfy the program requirements. The discussion also references related work done in other areas or addressed by other RDRs. Preliminary drawings are presented to further clarify significant aspects of the proposed work.

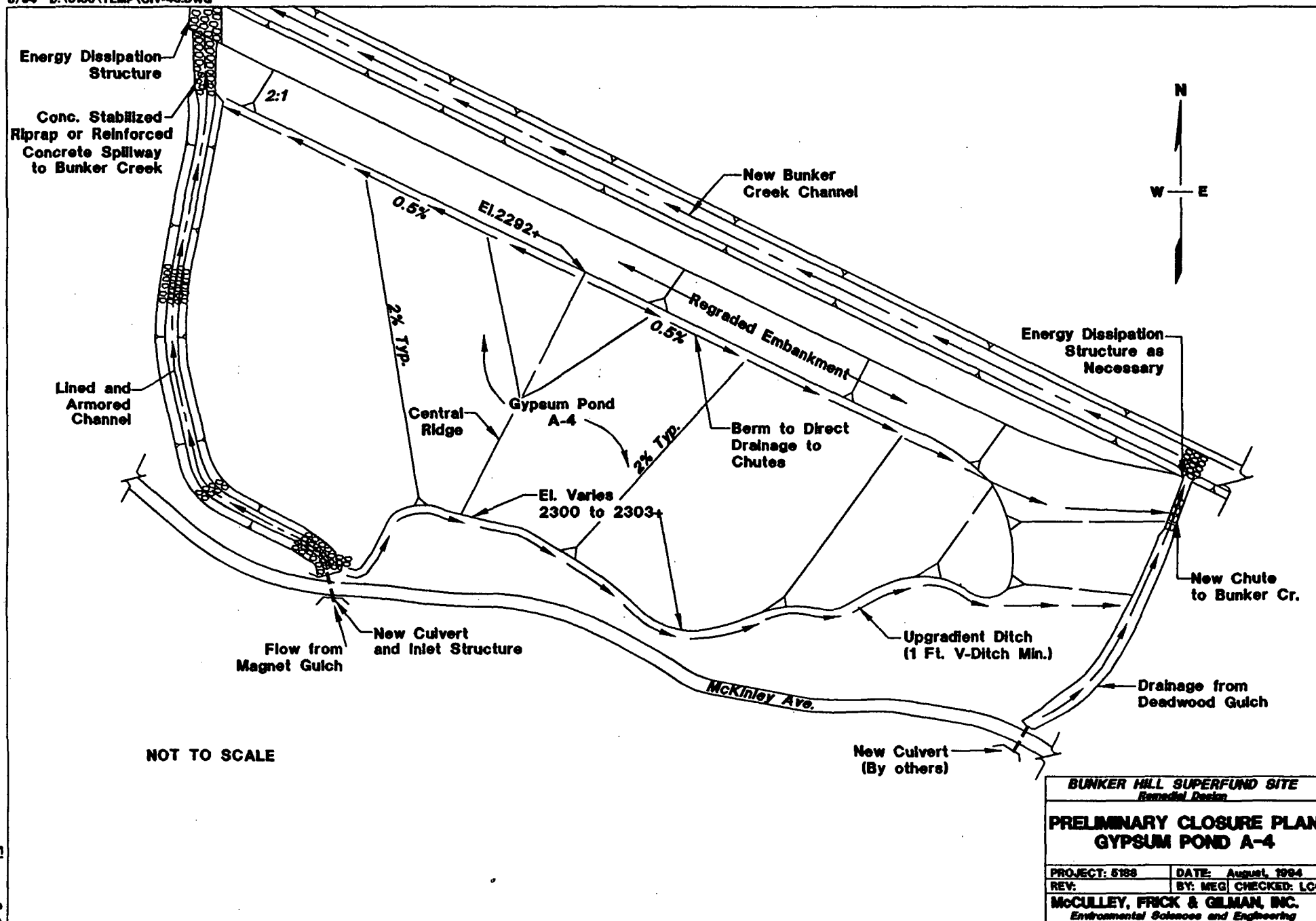
#### 3.1 GYPSUM POND A-4 CLOSURE

Closure of Gypsum Pond A-4 will require the following component tasks:

- lowering and regrading of the existing embankment, to enhance the stability of the structure and reduce surface erosion;
- placement of a fill layer over the impounded gypsum, graded at a minimum slope of 2 percent to promote positive drainage off the closure area and reduce the possibility of future ponding and resultant infiltration into the underlying gypsum;
- placement and vegetation of a cover layer of approved growth medium or topsoil over the graded fill and stabilized embankment;
- construction of a lined channel along the west edge of the closure area, as well as an appropriately sized culvert under McKinley Avenue complete with headwall and seepage barrier designed to minimize flow under McKinley Avenue and a spillway down the face of the west abutment, to convey Magnet Gulch storm flows to Bunker Creek;
- realignment and upgrading, as necessary, of the channel carrying Deadwood Gulch flows from McKinley Avenue to Bunker Creek; and
- construction of perimeter runoff/runoff control ditches, berms and discharge spillways, as necessary.

The overall preliminary closure plan for this area is shown on Figure 3-1.

The grading fill over the existing gypsum surface will be wedge-shaped, varying in thickness from a nominal cover at the north embankment to approximately six to eight feet thick along the southern boundary of the impoundment. It is presently estimated that construction of the grading fill will require placement of approximately 70,000 cy of material. This material will be obtained, in part, from the removal of the upper portion of the existing embankment, as well as from the borrow area to be developed in the Lead Smelter terraces or other off-site sources, as necessary. It is anticipated that grading fill will be placed in lifts of approximately 6 to 12 inches and compacted to the extent necessary to avoid significant settlement of the closure surface. Because of the potential variability of the materials that may be used as grading fill, no single compaction criterion can be specified at this time. However, it is anticipated that the materials will be compacted to approximately 90 percent of the maximum dry density as determined by the Standard Proctor Test (ASTM D-698) or to approximately 60 percent of the Relative Density (ASTM D-4253 & 4254). The latter criteria will be applicable if a granular material with little or no fines is used. As mentioned in Sections 1 and 2, prior to preparation of final designs, additional borings will be installed in existing areas of the impounded gypsum showing evidence of distress and in areas, such as along the channel alignment, that are critical to the success of the closure. These borings will serve to confirm the integrity and competence of the underlying gypsum. If any subsurface voids are detected, provision will be made in the final design to further expose such voids and to backfill them, as well as surface cracks, with stable material, prior to proceeding with construction of the general grading fill. In certain instances, consideration may be given, during preparation of the final design, to installation of a woven geotextile or geogrid mat on the gypsum surface, prior to placement of the grading fill material, to reinforce the fill layer



and inhibit future localized subsidence. Test pits excavated into the gypsum indicated that, for the most part, the sinkholes are a near surface phenomenon, except where active subgrade seepage is occurring at the south end of the site in the vicinity of the discharge from McKinley Pond. In general, cementation and resulting increased strength of the gypsum, which apparently increases with depth, would appear to preclude the need for surficial support in most areas. As mentioned previously, softer surficial layers of silt and organics, that may have accumulated in the closure area, will be compacted or removed from areas where loads due to the grading fill are expected to be higher in order to limit potential consolidation of these materials and surface subsidence. If removed, such materials may be stockpiled and utilized in the preparation of approved growth medium for placement on the closure surface.

Modification and upgrading of the existing A-4 embankment will include:

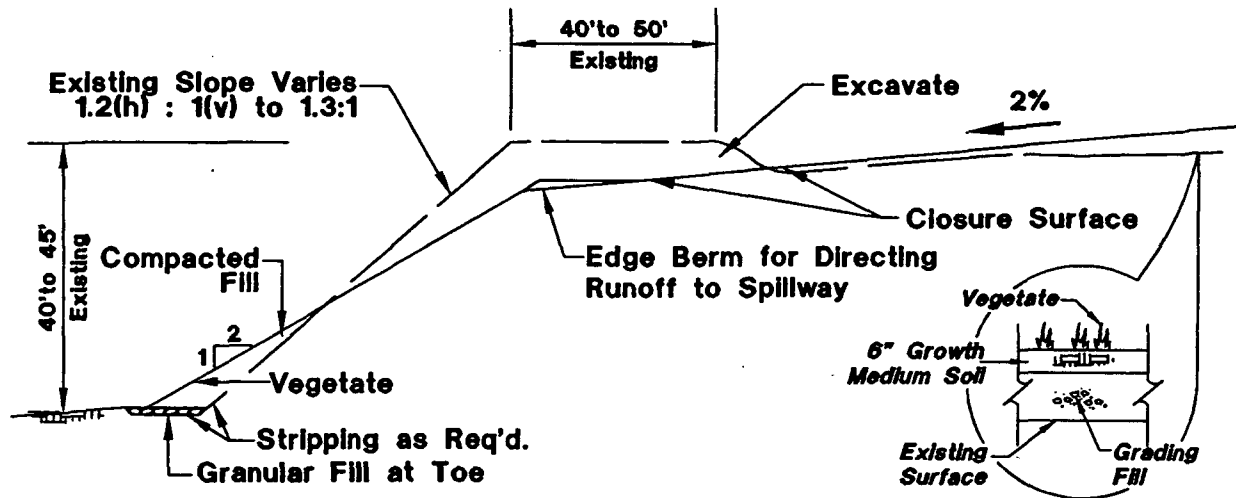
- removal of the upper portion of the structure, above the existing surface of the gypsum impoundment, to prevent future impounding of storm runoff on the closure surface and significantly reduce the loading on the subgrade foundation materials;
- removal of the unsuitable soft, wet, silty material within the eastern portion of the embankment and replacement, as necessary, with compacted, select fill material;
- regrading of the western portion of the downstream face of the embankment to a slope of 2:1 or flatter, to improve stability and reduce erosion potential;
- placement of additional compacted fill on the eastern portion of the downstream face of the embankment to produce a slope of 2:1 or flatter, thereby increasing the stability of the structure and reducing erosion potential, and to eliminate the existing ditch conveying Deadwood Gulch flows in this area; and
- construction of diversion berms along the remaining embankment crest to direct surface runoff either westward into the Magnet Gulch diversion channel or eastward into the Deadwood Gulch diversion channel. Such diversion



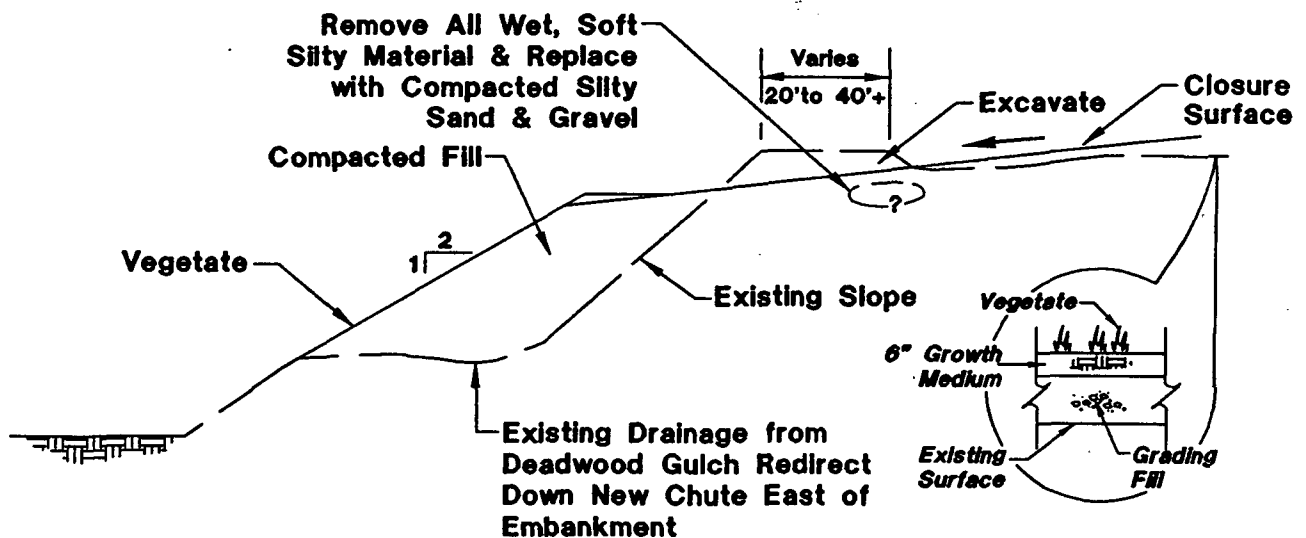
berms will prevent sheet flow and resultant erosion down the outer face of the embankment.

Prior to placement of new embankment materials, existing surfaces will be stripped of vegetation and other unsuitable material and scarified or benched, as necessary, to ensure an integral structure. Where additional stabilizing fill is placed in areas where there is evidence of seeps flowing from the embankment, a filter/drainage layer of clean granular material or geotextile material will be placed first, within the footprint of the new fill, to allow free discharge of any residual seepage that may continue to flow from the closure area. It is estimated that regrading and modification of the embankment will require approximately 39,000 cy of excavation and 26,000 cy of compacted fill. Proposed typical sections showing these modifications to the embankment are presented in Figure 3-2.

Upon completion of embankment regrading, placement of the closure grading fill and construction of drainage works, a minimum 6-inch layer of approved growth medium or topsoil will be placed on the regraded surfaces and the area will be seeded with a mixture of grass species used successfully in other parts of the Bunker Hill Site. The approved growth medium will be obtained from on-site sources and amended, as necessary, with wood fiber or other material. Topsoil, if used, will be obtained from off-site sources. An appropriate seeding mix and application rate will be investigated during preparation of final designs and specifications for the closure and incorporated therein. It is anticipated that the seed mix may include a blend of such grasses as rye, bluestem, milkvetch and fescue, applied at a rate of approximately 50 pounds per acre. As discussed in Section 5, if necessary, provision will be made for interim irrigation to promote establishment of vegetation in the closure area within a two-year period.



WESTERN A-4 EMBANKMENT SECTION



EASTERN A-4 EMBANKMENT SECTION

BUNKER HILL SUPERFUND SITE  
Remedial DesignGYPSUM POND A-4  
EMBANKMENT SECTIONS

PROJECT: 5188	DATE: AUGUST, 1994
REV:	BY: MEG CHECKED: LCO

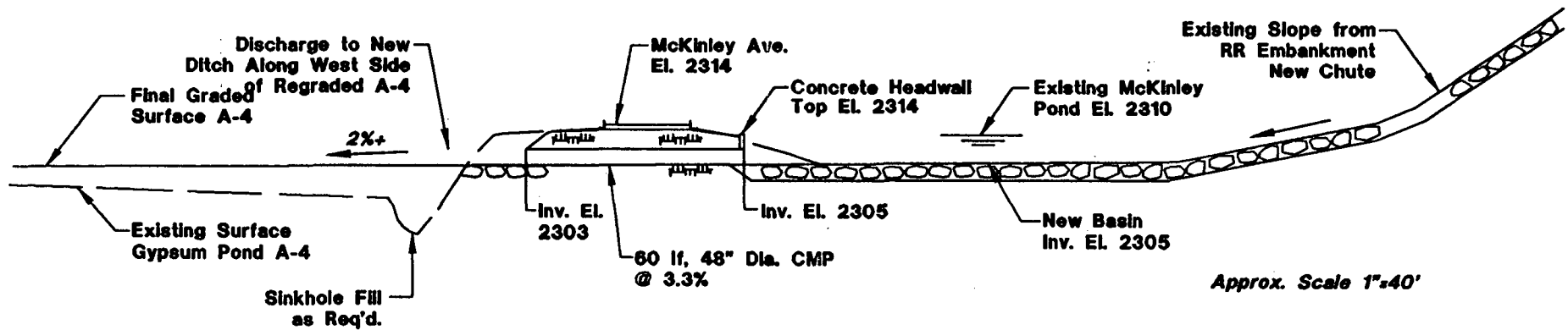
McCULLEY, FRICK & GILMAN, INC.  
Environmental Sciences and Engineering

## 3.2 DRAINAGE AND HYDRAULIC CONTROLS

### 3.2.1 Magnet Gulch Flows

It is understood that remediation upstream of the Gypsum Pond A-4 Closure area will include restoration of Magnet Gulch essentially to the original contours and that the restoration program will include retention and upgrading of the McKinley Pond area to serve as a stilling basin for flows discharging from Magnet Gulch. In order to restrict percolation of water through the McKinley Avenue embankment, installation of a suitable seepage barrier will be further investigated during preparation of the final closure designs, and constructed as part of the closure works. Such a seepage barrier may consist of a cutoff wall, extending down to a natural confining layer, or may be comprised of a surface liner or other flow barrier, as appropriate to local conditions and design objectives.

Flow out of the McKinley Pond energy dissipation basin will be conveyed under McKinley Avenue in an appropriately sized corrugated metal culvert, with flow-training headwalls at the inlet and riprap erosion protection at the outlet. A preliminary profile of these drainage facilities is presented in Figure 3-3. Downstream of the McKinley Avenue culvert outlet, a lined and armored channel will convey the flows along the west perimeter of the A-4 closure area. The liner for this channel will consist of a textured, flexible geomembrane, placed beneath the riprap armor and a protective geotextile cushion layer. The liner will inhibit infiltration of water into the underlying subgrade from the channel. Peak flow velocities in the channel are expected to be in the range of approximately six to seven fps. To protect the channel soils against erosion from such flow velocities, a riprap erosion protection blanket, approximately 12 inches thick, will be required, with a  $D_{50}$  particle size of eight inches. In order to promote smooth flow conditions and to minimize water surface runup around curves, the minimum horizontal curve radius along the



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Remedial Design

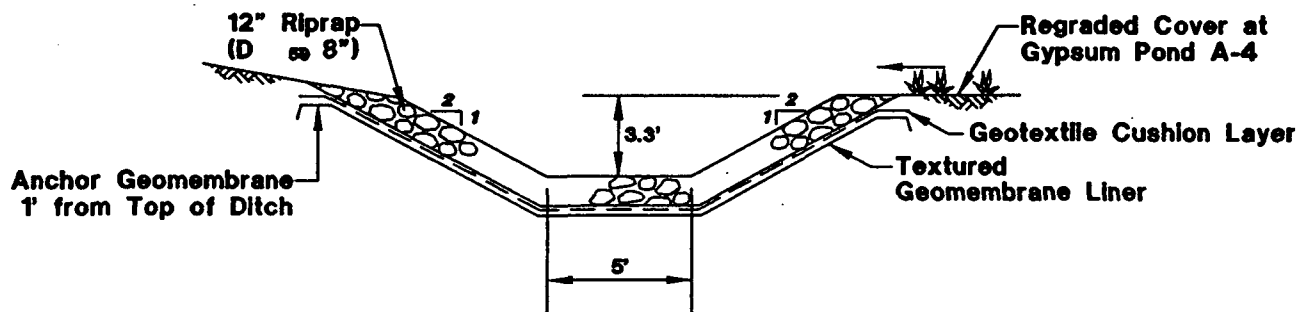
**PROFILE-CULVERT UNDER  
McKINLEY AVENUE  
AT MAGNET GULCH**

PROJECT: 5188	DATE: August, 1994
REV:	BY: MEG CHECKED: LCO

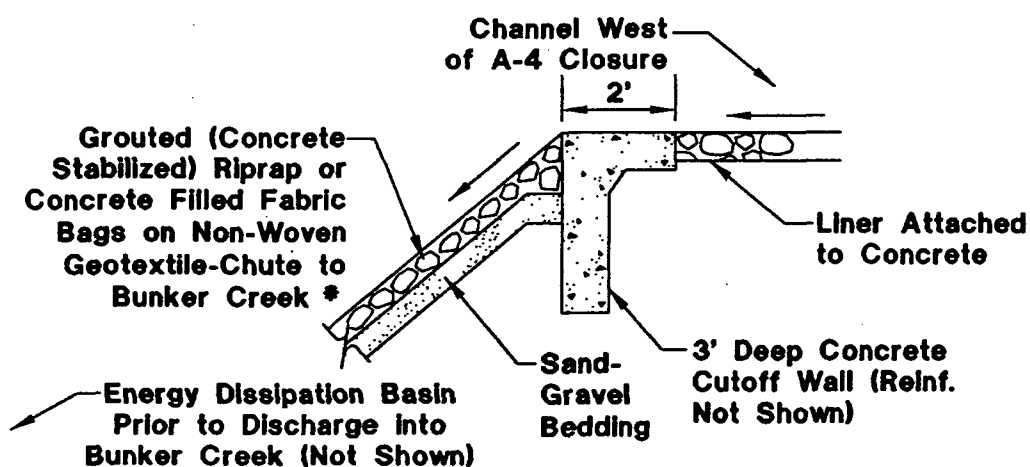
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channel alignment will be 60 feet. At the northwest boundary of the closure area, the channel will transition over a concrete sill and into a reinforced concrete or grouted-riprap spillway, which will carry the flow down the face of the west abutment and to Bunker Creek. An appropriately shaped transition will be constructed at the spillway crest to promote smooth flow from the channel to the spillway and the spillway will be designed to accommodate the anticipated flow velocities and depths resulting from the design storm event. A rock outcrop is evident in the vicinity of the west abutment of the A-4 embankment. To the extent practicable, the spillway will be constructed into the rock outcrop, to provide stable foundation conditions. An energy dissipation basin, consisting of a pond area with included large, randomly spaced boulders or formed concrete structures to interrupt the flow, will be constructed at the base of the spillway to avoid excessive local scour at this location within the Bunker Creek channel. Figure 3-4 presents the preliminary cross-sections of these drainage facilities.

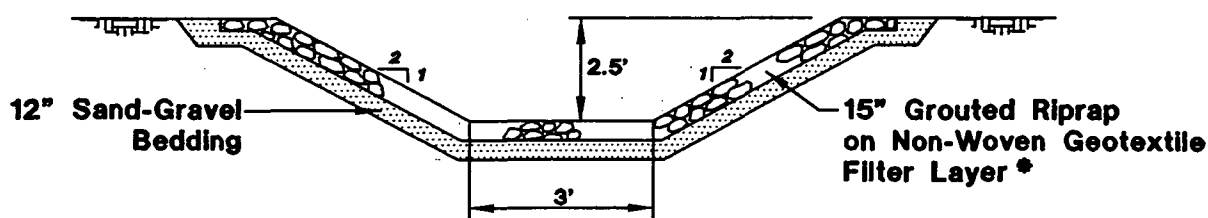
During development of the final designs, consideration will be given to both reinforced concrete and grouted riprap for construction of the spillway. The final determination of the construction material for the spillway will be subject to the approval of the Agency. Reinforced concrete design will conform to the requirements of ACI 318. Grouted (or concrete stabilized) riprap has also been found to be a stable and relatively impervious channel lining, which is particularly useful for lining low-flow channels and steep banks, and requires only nominal maintenance. The appearance of grouted riprap is compatible with natural channels. If selected as the media for construction of the spillway, concrete for grouted riprap will conform to the Standard Specifications for Highway Construction of the Idaho Transportation Department (1990). This requires, at a minimum, the use of a Class 15 concrete, having a minimum 28-day compressive strength of 1500 pounds per square inch (psi). During the final design, an evaluation will be made regarding the possible merits of using concrete with a minimum 28-day compressive strength of 2,000 psi



### DRAINAGE CHANNEL WEST OF A-4 CLOSURE



### SPILLWAY CUTOFF WALL AND SILL



### SPILLWAY SECTION

\* NOTE: Reinforced concrete will also be evaluated for construction of the spillway

#### BUNKER HILL SUPERFUND SITE Remedial Design

#### LOWER MAGNET GULCH DRAINAGE CHANNEL & SPILLWAY OUTFALL TO BUNKER CREEK

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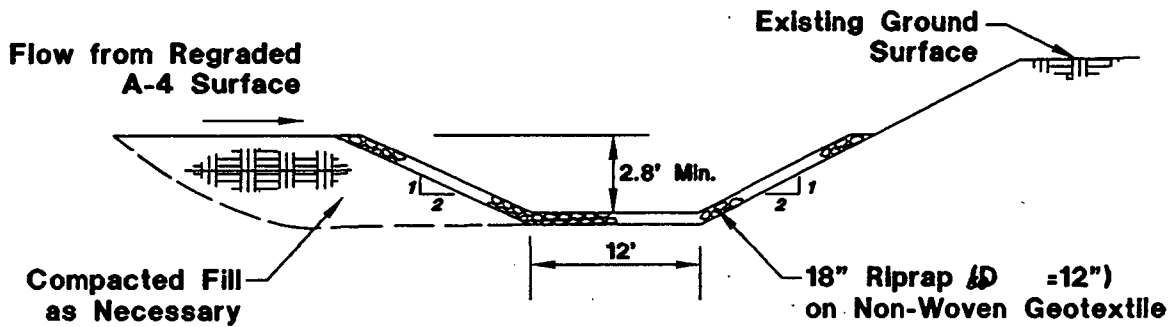
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as the infill grout. In addition, a fibrillated polypropylene fiber reinforcement may be specified for the concrete, to provide increased resistance to thermal and long-term shrinkage cracking. Class "F" fly ash may also be used as a partial cement substitute in the mix to increase flowability and further reduce the potential for shrinkage cracking. Concrete grout will be placed in riprap voids to a depth of approximately 75 percent of the total riprap blanket thickness.

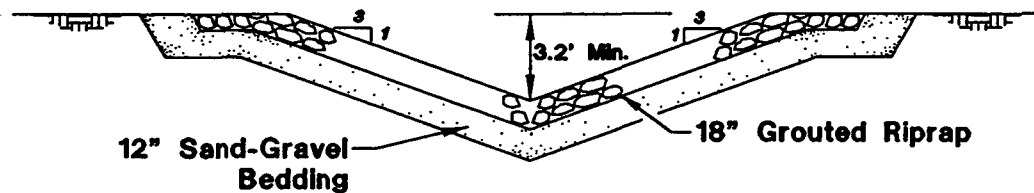
Rock used for riprap will consist of sound, dense angular pieces, which are resistant to weathering and are free from seams or other structural defects. The dry specific gravity of the rock will be at least 2.6 and the maximum percent wear will be no greater than 50 percent when tested in accordance with the Los Angeles Abrasion protocol (ASTM C-535, 1000 revolutions). The greatest dimension of individual riprap pieces will be not more than three times their least dimension.

### 3.2.2 Deadwood Gulch Flows

Flows from Deadwood Gulch will be conveyed in a realigned channel, east of the closed A-4 impoundment, and down a spillway, as necessary, to Bunker Creek. Alignment and design of the channel will be established in consultation with the Agency and will be subject to their approval. As for the Magnet Gulch drainage channel, these works will be designed to convey the flows generated by a 100-year, 24-hour storm in the Deadwood Gulch drainage. If a spillway is necessary, a cutoff wall will be installed at the crest or grade break of the spillway to ensure preservation of the channel cross-section and to prevent headcutting erosion at the grade transition point. Structural concrete for such applications will have a minimum 28-day compressive strength of 3000 psi. Figure 3-5 presents the preliminary cross-sections of these drainage facilities.



**LOWER CHANNEL SECTION EAST  
OF A-4 IMPOUNDMENT**



**LOWER DEADWOOD GULCH SPILLWAY  
TO BUNKER CREEK**

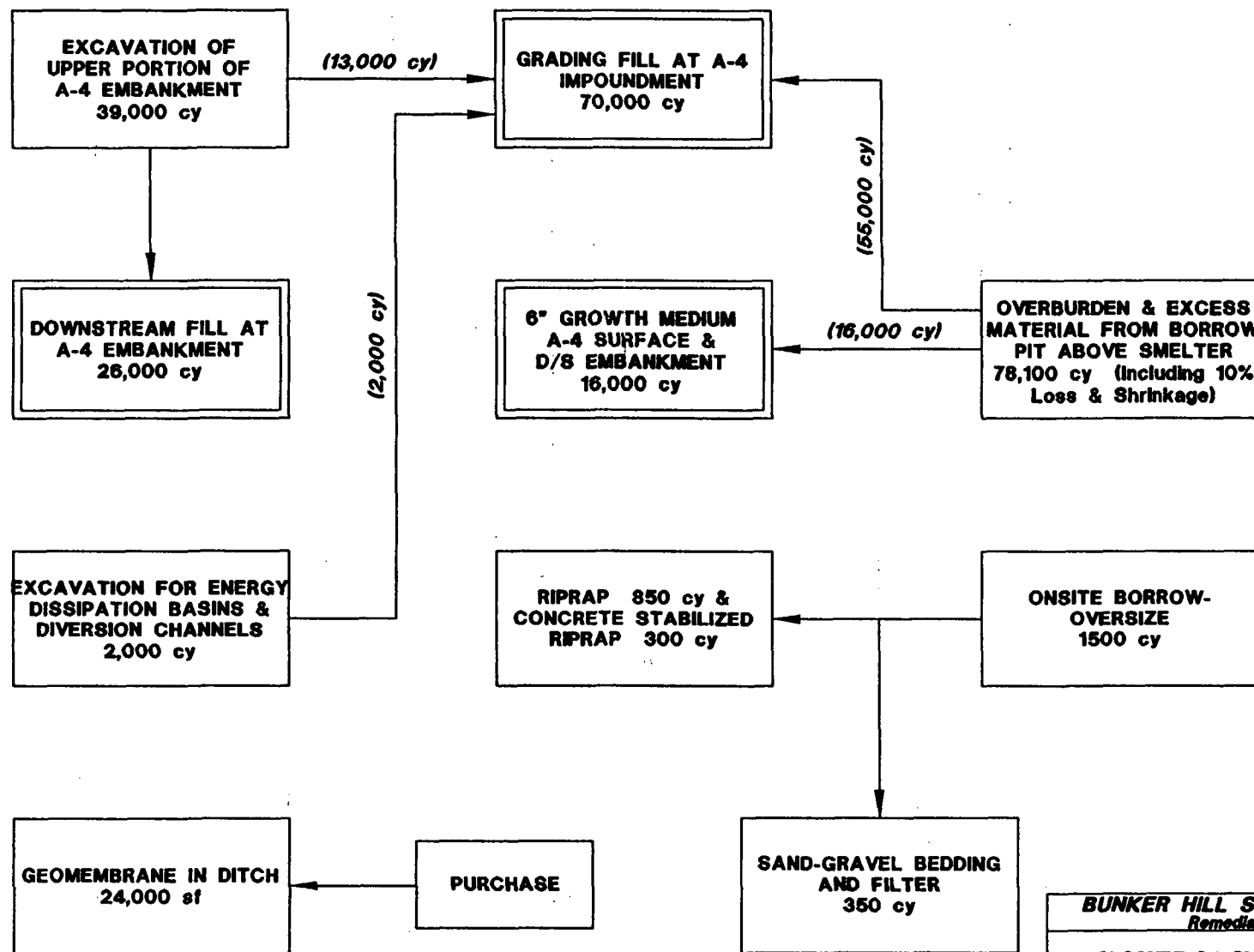
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*Remedial Design*

**LOWER DEADWOOD GULCH  
TYPICAL SECTIONS**

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Figure 3-5





(Note: Estimated Quantities are + 20%)

Double Boxes:   Denote Final In Place Estimated Quantities

**BUNKER HILL SUPERFUND SITE**  
Remedial Design

**CLOSURE OF GYPSUM PONDS A4**  
**PRELIMINARY MATERIAL**  
**BALANCE FLOWSHEET**

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### 3.3 MATERIAL QUANTITY BALANCE

Figure 3-6 presents the estimated material quantity balance for closure of Gypsum Pond A-4. As shown, removal of the upper portion of the embankment will require excavation of approximately 39,000 cy and flattening of the downstream face of the embankment will require placement of approximately 26,000 cy of compacted select fill material. Construction of the closure grading fill and cover layer will require placement of approximately 70,000 cy of random fill and 16,000 cy of approved growth medium or topsoil, respectively. Protection of the drainage channel will require approximately 1,150 cy of riprap. It is expected that the majority of these materials, with the exception of the riprap, can be obtained from the borrow area above the Lead Smelter. The estimated quantities presented in Figure 3-6 are accurate to within plus or minus 20 percent. These will be further refined during final design.

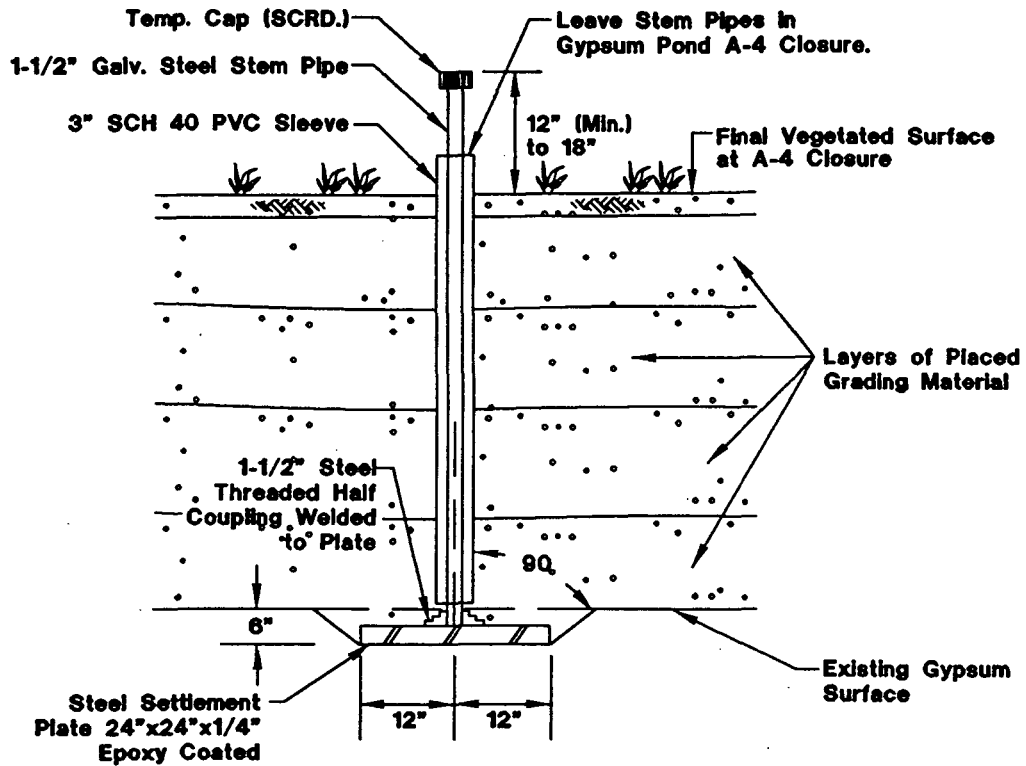
### 3.4 MONITORING DEVICES

Provision will be made during construction of the Gypsum Pond A-4 closure to assess consolidation of the gypsum and the grading fill. Settlement gauges, consisting of square, coated steel plates with vertical galvanized steel riser stems and PVC pipe sleeves, will be placed on the existing gypsum surface at appropriate locations. The settlement gauges will be horizontally and vertically referenced to a control baseline and benchmark located in an area that will remain unchanged throughout the closure period. A minimum of five settlement gauges will be permanently installed throughout the A-4 impoundment area at locations selected to achieve relatively uniform coverage of the area and to represent areas of highest potential settlement. Monitoring of the settlement gauges will be done on a monthly basis during placement of grading fill. Upon completion of the closure cover, the riser stems will be capped approximately 1 to 1.5 feet above grade so that the riser stems will continue to be accessible to permit ongoing periodic measurements, to detect and assess the onset of

any localized settlement or creep consolidation. A typical settlement plate and settlement monument are shown in Figure 3-7.

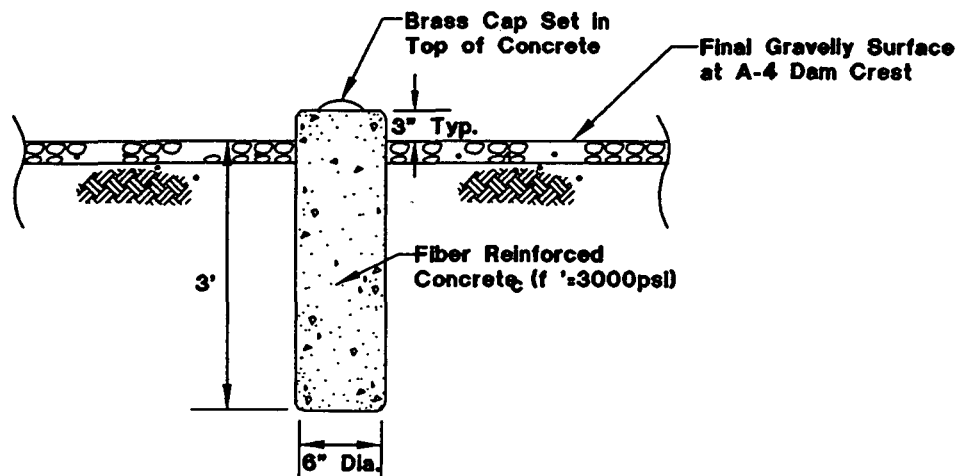
### 3.5 SITE SECURITY AND ACCESS

The A-4 closure area will be secured with a fence to limit wildlife intrusion into the revegetation area. The fence will also be marked with "No Trespassing" signs to discourage unauthorized entry and possible damage to the revegetation program. Lockable entry gates will be provided at appropriate locations to permit convenient maintenance access.



## TYPICAL SETTLEMENT PLATE

NOT TO SCALE



## TYPICAL SETTLEMENT MONUMENT

NOT TO SCALE

**BUNKER HILL SUPERFUND SITE**  
Remedial Design

**TYPICAL SETTLEMENT PLATE & MONUMENT SECTIONS**

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#### 4.0 CONSTRUCTION CONSIDERATIONS

This section addresses in greater detail the construction considerations necessary to achieve the performance objectives set out in the designs developed under Section 3.0. Specifications are expanded, where appropriate, to include such things as particular handling and placement requirements for various types of earthwork as well as corresponding quality assurance/quality control requirements, tests, and acceptance criteria. As warranted, this section also identifies specific sequences and dependencies of activities, as well as logistical requirements of various aspects of the work. Particular attention is given to dust control and sediment control measures required during construction. In general, all construction work will comply with the requirements of an updated Site Health and Safety Plan. Adequate, approved decontamination procedures will be utilized for all personnel and equipment prior to departure from the site.

##### 4.1 GENERAL CLOSURE SCHEDULE CONSIDERATIONS

To some extent, the closure schedule for Gypsum Pond A-4 is dependent upon other remedial activities at the Bunker Hill Site. For example, remediation of Magnet Gulch (including channelization; removal of debris, obstructions and any subsurface conduits; and upgrading of McKinley Pond to act as an energy dissipation basin) prior to closure of Gypsum Pond A-4 would assist in controlling potential flood and sediment inflows and uncontrolled subsurface inflows to downstream work areas, and would reduce the risk of damage to completed works. However, if work in Upper Magnet Gulch is delayed, it may be advantageous to perform some interim remedial measures at Gypsum Pond A-4, earlier in the overall program, to facilitate a more efficient closure at a later date. In order to provide an opportunity for any primary settlement to occur, prior to placement of the approved growth medium or topsoil and establishment of vegetation, consideration will be given to allowing the grading fill to remain open over a winter shutdown period.

#### 4.2 CLOSURE OF GYPSUM POND A-4

Closure-in-place of Gypsum Pond A-4 will be done using standard construction equipment and methods. Embankment regrading and stabilization will be performed prior to or during regrading and covering of the impoundment surface. Temporary runoff control berms will be constructed, as required. Flattening of the downstream face of the embankment will be performed by pushing the material from the upper stage of the embankment down the slope and then placing and compacting the material along the toe of the downstream face slope in horizontal lifts of eight to ten inches finished thickness. The material will be compacted to at least 90 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D-1557). In preparation for construction of the toe fill, vegetation will be stripped from the construction area, the contact surface will be scarified or benched and granular drainage material or a geosynthetic drainage media will be placed in the footprint area.

Runon/runoff drainage controls will be constructed at appropriate locations around the perimeter of the A-4 impoundment, early in the remediation program. This work will mitigate the conditions which have caused the existing problems associated with uncontrolled infiltration of water into the impoundment area, and may improve the efficiency of subsequent closure procedures. Such initial drainage controls may include filling and/or regrading areas of existing depressions and construction of interceptor/diversion ditches, around the impoundment, to redirect runon flows and reduce infiltration. It may be advantageous to also remove the wet, soft silty material from the upper portion of the eastern embankment at an early stage to inhibit future movement and increase the stability in this area of the embankment, prior to commencement of the full scale closure.

Regrading of the surface of the A-4 impoundment will be performed following removal of standing water from the upgradient McKinley Pond and plugging of any conduit conveying flows from

McKinley Pond into the Gypsum Pond A-4 closure area. Grading fill will be comprised of excess material from the removed upper portion of the A-4 embankment, suitable material salvaged from excavation of ditches and channels, overburden material from the Smelter Terrace borrow area, and other material from off-site sources, as necessary. Settlement plate monitoring devices will be placed on the existing gypsum surfaces prior to placement of grading fill.

Fill material will be transported to the Gypsum Pond A-4 Closure area by trucks or scrapers and will be spread throughout the area using conventional dozers. Compaction of the fill material will be accomplished using rubber tired or other suitable equipment. The material will be compacted to a density equal to 85 percent of the maximum dry density of the source material as determined by the Standard Proctor Density Test (ASTM D-698), in order to ensure trafficability and limit consolidation and surface settlements. Soft materials or soils containing waste materials, wood or organic matter will not be allowed in the grading fill.

Regular dust control procedures will be implemented, using water trucks and/or polymeric sprays, during construction operations performed during dry or windy periods. If all or a portion of the grading fill remains open over a winter shutdown period, prior to placing the vegetated cover, the surface will either be covered with a granular material not susceptible to generation of wind blown dust or covered with a polymeric dust suppressant.

The surface slope of the constructed grading fill will be verified by survey, prior to placement of approved growth medium or topsoil. To promote runoff, a minimum gradient of two percent will be maintained and the maximum grade will be restricted to five percent to limit erosion. Following placement of the grading fill, any localized areas of settlement that are detected will be regraded to eliminate potential ponding. A final survey check will be conducted after the grading fill has stabilized. The entire regraded surface of the Gypsum Pond A-4 Closure will then be

covered with approved growth medium or topsoil and seeded with grass species that have been found to be successful elsewhere on the Bunker Hill Site.

The drainage channel conveying Magnet Gulch flows along the west perimeter of the Gypsum Pond A-4 Closure will be constructed to tolerances of plus 1 and minus 0.5 foot in cross-section and plus 0.5 and minus 0.1 percent in grade. The channel subgrade profile and cross-section will be verified by survey prior to installation of the textured geomembrane liner. The liner will be installed on a smooth, prepared subgrade, with no protruding rocks or other sharp objects that may damage the liner. The integrity of the liner seams will be checked continuously, using vacuum-box or other acceptable testing methods. The edges of the liner will be anchored into the cover material along the crests of the channel side slopes. A protective geotextile cushion layer will be placed on the liner and riprap will be placed over the geotextile to establish the final channel cross-section.

#### 4.3 FINAL SURVEYING

In addition to survey control performed during construction, final as-constructed surveys will be conducted at the Gypsum Pond A-4 Closure area. Survey data will conform to the National Accuracy Standards for two-foot/ten-foot contour interval mapping and will be based on the National Geodetic Vertical Datum of 1929 with horizontal control based on the Idaho West Zone Plane Coordinate System.



## 5.0 LONG-TERM OPERATIONS AND MAINTENANCE

This section provides preliminary guidelines regarding the expected ongoing operation and maintenance (O&M) requirements of the closure of Gypsum Pond A-4 and associated areas. There are numerous options available for implementation of an O&M program for the closure. An O&M plan will be prepared and submitted in conjunction with the Remedial Action Work Plan and implementation of the O&M program will be discussed in detail in that submittal. The long-term O&M requirements for the Gypsum Pond A-4 Closure will be consistent with those appropriate to use of the area as a closed but otherwise unimproved facility, regardless of the land use or overall site conditions after the closure of Gypsum Pond A-4.

### 5.1 GRADING FILL AND COVER LAYER

The grading fill and cover layer of the Gypsum Pond A-4 Closure and the downstream face of the remaining embankment will require regular inspection during the post closure period, primarily to detect differential settlement and erosion. Regular inspections, including surveying of settlement gages, will be performed on a quarterly basis during the first two years following closure, or until vegetation has been established and surface settlement has stabilized.

Some restorative maintenance may be required if unanticipated conditions or problems occur. Any areas of the cover or embankments indicating loss of vegetation from sheet, rill, or gully erosion will require restoration with new soil and reseeding. Any necessary repairs to the runoff control berms around the perimeter of the Gypsum Pond A-4 Closure will also be performed. Any areas of the closure showing evidence of ponding following precipitation events or differential settlement, which would inhibit free runoff from the surface, will be filled with appropriate soils, regraded and reseeded. In addition, regular removal of deep rooted vegetation from the embankment will be

performed to avoid jeopardizing the long-term stability of the structure.

Approximately two years after closure, if no additional evidence of erosion or settlement is encountered, inspection frequencies may be reduced to once per year, with additional, unscheduled inspections following major storm events. Limited recreational uses of the closure area may be considered at that time.

## 5.2 DRAINAGE FACILITIES

Perimeter drainage facilities, including the main spillway at the west A-4 embankment abutment, runoff chutes and energy dissipation basins, will be inspected on a quarterly basis and after significant precipitation events for the first two years following closure. They will be inspected for erosion, displaced riprap, loss of vegetation, slope sloughing, or debris deposition.

Regular maintenance procedures will include mowing of vegetation along berms and in ditches to allow continued free drainage; this will be done twice yearly or as required. Periodic maintenance procedures may include removal of debris from channels and ditches, repair of eroded or sloughed areas, repair of displaced riprap and reseeding.

## 5.3 AREA SECURITY FACILITIES

Quarterly inspections of security fencing and gates will be performed during the first two years following closure to ensure that access is restricted to authorized personnel. When the closure is determined to be stable and vegetation is well established, it may be determined that site fencing and gates are no longer required and may be removed to allow limited recreational use of the area.

## 5.4 SETTLEMENT MONITORING

Quarterly monitoring at the Gypsum Pond A-4 Closure will be performed for the first two years following closure in conjunction with inspection of surface conditions. If the settlement measurements indicate stable conditions, monitoring frequencies may be reduced to once per year. The settlement gages are not expected to require maintenance.

## 6.0 FUTURE DELIVERABLES (PLANS AND REPORTS)

The following described plans and reports will be submitted to IDHW and/or EPA for the Gypsum Pond A-4 Closure Element of Work in the A-4 Gypsum Pond Subarea.

### 6.1 GENERAL PROJECT MANAGEMENT

#### 6.1.1 Project Management Monthly Reports

Monthly reports submitted pursuant to Section 34 of the Consent Decree will include a section on the Gypsum Pond A-4 Closure Element of Work when applicable. The Gypsum Pond A-4 Closure section will include the following basic information:

- General description of the work.
- Activities/tasks undertaken during the reporting period, and expected to be undertaken during the next reporting period.
- Identification of issues and actions that have been or are being taken to resolve the issues.
- Status of the Gypsum Pond A-4 Closure schedule and any proposed schedule changes.

#### 6.1.2 Technical Memoranda

Technical memoranda are the mechanism for requesting modification of plans, designs, and schedules. Technical memoranda will not be prepared or required for non-material field changes that have been approved by the agencies. In the event that the Stauffer Entities determine that modification of an approved plan, design, or schedule is necessary, the Stauffer Entities will submit a written request for the modification to the Agency Project Coordinators which will include, but will not be limited to, the following information:

- General description of and purpose for the modification.
- Justification, including necessary calculations, if any, for the modification.
- Proposed actions to be taken to implement the modification, including any actions related to subsidiary documents, milestone events, or activities affected by the modification.
- Recommendations.

## 6.2 REMEDIAL DESIGN

Further design report beyond this Draft RDR will consist of the following:

### 6.2.1 Final Remedial Design Report

After completion of field surveys and further geotechnical investigations, as necessary, this RDR will be upgraded into a Draft Final RDR with the addition of drawings showing existing and proposed cross sections of the closure area, the embankment modifications and the channel improvements. The Draft Final Gypsum Pond A-4 Closure RDR will be submitted to the agencies within 90 days after lodging of the Consent Decree.

Upon receipt of comments and requested modifications from EPA and the State of Idaho, the Draft Final Remedial Design Report will be appropriately revised and will be resubmitted as a Final RDR. The Final RDR will include all the elements contained herein, plus the following:

- design drawings;
- design specifications;
- design calculations;
- design quality assurance considerations

- general design concept and criteria of facilities to be constructed;
- descriptions of existing facilities and identification of any that will be altered, destroyed, or abandoned during construction;
- descriptions of off-site facilities required or affected;
- analysis/discussion of Performance Standards and how they have been incorporated into the design; and
- design parameters dictated by the Performance Standards.

No further design reports will be required beyond the submittal of the Final RDR. Technical memoranda will be provided, as necessary, to address any subsequent design modifications.

### 6.3 REMEDIAL ACTION

#### 6.3.1 Gypsum Pond A-4 Closure Remedial Action Work Plan

Following completion of the remedial design phase, the Stauffer Entities will submit a work plan outlining the proposed Gypsum Pond A-4 Closure remediation activities. A draft of this work plan will be submitted to the Agencies within 180 days after approval of the Final RDR, subject to confirmation of proposed remedial actions in areas upstream of and adjacent to the A-4 Gypsum Pond closure area. Agency comments on the draft work plan will be addressed in the Final Gypsum Pond A-4 Closure Remedial Action Work Plan. At a minimum the Final Gypsum Pond A-4 Closure Remedial Action Work Plan will include:

- the scope of proposed remediation;
- a plan showing the area proposed for remediation;
- a remediation schedule;
- any deviations or changes from work tasks or procedures outlined in the Final Gypsum Pond A-4 Closure RDR;

- a plan for coordinating, integrating, and communicating with various agencies;
- a description of deliverables and milestones; and
- a discussion of any health and safety issues particular to Gypsum Pond A-4.

### 6.3.2 Health and Safety

A Remedial Action Health and Safety Plan will be prepared that comprehensively addresses construction work in Area \_\_. Health and safety issues specific to the Gypsum Pond A-4 Closure Element of Work will be addressed in the Gypsum Pond A-4 Closure Remedial Action Work Plan. As noted above, a draft of this work plan will be submitted for agency approval prior to the commencement of remediation activities. The health and safety portion of the Remedial Action Work Plan will include a description of any monitoring activities to be undertaken during closure of Gypsum Pond A-4.

### 6.3.3 Construction Completion Report

The Construction Completion Report will be submitted 60 days following the completion of construction activities at Gypsum Pond A-4. The report will provide evaluations of Completion of Work, relative to the scope outlined in the Final Gypsum Pond A-4 Closure Remedial Action Work Plan. The Construction Completion Report will include, but will not necessarily be limited to the following:

- an overall description of the Report, including its purpose, and an overall description of the Work covered by the Report;
- an overall description of the construction components of the Work, and all associated facilities and appurtenances; and
- as-built plans and specifications, including:
  - construction QA/QC records; and

- summaries of any modifications implemented by Technical Memoranda.

An Idaho-registered Professional Engineer will sign and stamp as-built plans for the Gypsum Pond A-4 Closure Element of Work.

#### 6.3.4 Post-Closure O&M Plan

The Post-Closure O&M Plan for Gypsum Pond A-4 will address the specific post-remediation activities required to maintain the effectiveness of the remedy. The Plan will address, but will not necessarily be limited to:

- operational procedures;
- operational emergency response;
- maintenance procedures and schedules;
- monitoring procedures and schedules;
- parts and equipment inventories;
- plan for demonstrating compliance with Performance Standards.

#### 6.3.5 Gypsum Pond A-4 Closure Annual Monitoring Reports

Reports presenting the results of ongoing monitoring activities at Gypsum Pond A-4 will be prepared annually, within 90 days following the conclusion of the last monitoring event. The reports will include, but will not necessarily be limited to the following:

- results of settlement gage surveys, conducted as specified in Section 5.4;
- a brief evaluation of the data from the current year, relative to historical data.



## 7.0 CERTIFICATION OF COMPLETION OF REMEDIAL ACTION

A Pre-Certification Inspection will be conducted within 90 days of concluding that the Performance Standards have been attained for the Gypsum Pond A-4 Element of Work. Within 30 days of the Pre-Certification Inspection, a Completion of Remedial Action Certification Report will be submitted to IDHW and EPA. This Report will serve as the Stauffer Entities' documentation supporting the completion of remedial actions and achievement of Performance Standards at the Gypsum Pond A-4 Closure and their request for certification from the agencies. The Report will include, but will not necessarily be limited to:

- an overall description of the Report, including its purpose, and a general description of the Gypsum Pond A-4 area, including the Components of Work addressed by the Report;
- findings of the Pre-Certification Inspection, including documentation supporting the claim that the applicable Performance Standards have been attained;
- cross references to as-built drawings in the Construction Completion Reports and Post-Closure O&M Plan , as appropriate;
- demonstration that all obligations for the Gypsum Pond A-4 Element of Work, as presented in the SOW and the Consent Decree, have been satisfactorily achieved by the Stauffer Entities, in accordance with the Consent Decree;
- a statement by the Stauffer Entities' Project Coordinator that remedial action has been completed in full satisfaction of the requirements of the Consent Decree; and
- a statement by an Idaho-registered Professional Engineer that the remedial action at Gypsum Pond A-4 is in full satisfaction of the requirements of the Consent Decree, and that it conforms to the plans and specifications presented in the Final Remedial Design Report or amendments thereto.

## 8.0 REFERENCES

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APPENDIX A

PRELIMINARY GEOTECHNICAL REVIEW, BUNKER  
HILL SUPERFUND SITE (REMEDIAL DESIGN FOR  
CIA AND GYPSUM PONDS A-1/A-4 CLOSURES).  
GEORGE TOLAND, GEOTECHNICAL CONSULTANT.

RECEIVED JUN 1 1993

CONFIDENTIAL  
SETTLEMENT COMMUNICATION

May 27, 1993

Mr. John Rahe  
McMulley, Frick & Gilman, Inc.  
737 - 29th Street, Suite 202  
Boulder, CO 80303 - 2317

EPA Region 10 Superfund

**RELEASABLE**

Date 3/7/02

Initial CV

Dear John:

PRELIMINARY GEOTECHNICAL  
REVIEW SUBCONTRACT  
BUNKER HILL SUPERFUND SITE  
NEAR KELLOGG, IDAHO

## 1.0 INTRODUCTION

This report provides a summary of my review of the Bunker Hill Superfund documents provided. The recommendations and conclusions provided are based upon my experience with gypsum tailings ponds and my review of the following material provided to me:

- (1) Central Impoundment Area (CIA) Draft Closure Remedial Design Report (RDR) - December 1992 by McCulley, Frick & Gilman, Inc.
- (2) Gypsum Ponds A-1 and A-4 Draft Closure Remedial Design Report (RDR) - December 1992 by McCulley, Frick & Gilman, Inc.
- (3) Preliminary Comments on (1) and (2) above - February 1993 by EPA
- (4) Geotechnical Investigation for Bunker Hill Superfund Site Remedial Design - Draft March 1993
- (5) Central Impoundment Area (CIA) Preliminary Geotechnical Report - 1988 by Dames & Moore
- (6) Draft - Clay Source Suitability and Borrow Area Development Report - March 1993 by McCulley, Frick & Gilman
- (7) Draft - Settlement and Stability Calculations - undated by McCulley, Frick & Gilman

## 2.0 CONCLUSIONS

This report should be considered as a draft or preliminary document subject to modifications to reflect results of subsequent tests. The concepts for closure of the CIA, Gypsum Pond A-5, Gypsum Pond A-4, and Gypsum Pond A-1 are workable. This includes the closure of Gypsum Pond A-4 in-place and adding gypsum fill to existing Gypsum Pond A-5. Comments on each of the closures are as follows:

- (1) The CIA Closure (not including Gypsum Pond A-5)
  - (a) Embankment stability as shown by calculations is adequate. The planned embankment closure slopes have an adequate factor of safety both for static and seismic design requirements.
  - (b) All grading fill placed on the existing surface should be compacted to minimize settlement of the placed fill.
  - (c) The weight of the grading fill will not result in settlement sufficient to disrupt surface drainage.
- (2) Gypsum Pond A-5 Closure
  - (a) Embankment stability as shown by calculations is adequate. The planned embankment closure slopes have an adequate factor of safety both for static and seismic design requirements.
  - (b) The creep consolidation of covered gypsum should be less than the primary consolidation, and should have little effect on total settlement.
  - (c) The settlement due to the increased drained weight of the gypsum or from the added weight of the grading fill, cap, and cover should not be of a magnitude that would disrupt the surface drainage from the closed impoundment. Wick drains, sand piles, or other methods of increasing the rate of settlement should not be required.
  - (d) All new gypsum fill should be compacted when placed.
- (3) Modification of Gypsum Pond A-1 Dam
  - (a) Gypsum Pond A-1 should be a viable storm-water detention and sediment control reservoir.

- (b) Embankment stability as shown by calculations is adequate. The planned embankment slopes have an adequate factor of safety both for static and seismic design requirements.
- (c) Test Pits in the existing impounded gypsum should prove that the gypsum can be excavated and placed in the Gypsum Pond A-5 area with conventional earth moving equipment.
- (d) The existing decant pipe through the embankment must be investigated and its long-term strength evaluated before using it as an outlet from the detention pond.

(4) In-Place Closure of Gypsum Pond A-4

- (a) Gypsum Pond A-4 can be safely closed in-place and the removal of the gypsum should not be required.
- (b) Embankment stability as shown by calculations is adequate. The planned embankment closure slopes have an adequate factor of safety both for static and seismic design requirements.
- (c) The settlement due to the increased drained weight of the gypsum or from the added weight of the grading fill and cover should not be of a magnitude that would disrupt the surface drainage from the closed impoundment.
- (d) Drainage of surface runoff water around the perimeter of Gypsum Pond A-4 would likely be a preferred design to across Gypsum Pond A-4.

### 3.0 CLOSURE OF GYPSUM DISPOSAL PONDS

#### 3.1 GEOTECHNICAL EVALUATIONS

The geotechnical data and conclusions used in the RDR for the gypsum pond closures for the CIA closure and the A-1 and A-4 closures, were obtained from the Dames & Moore report of 1988.

My interpretation of the test data is as following:

- (1) The gypsum material is fine grained but has properties of a granular material.
- (2) The gypsum material exhibits secondary or creep consolidation characteristics.
- (3) The peak strength is very high but tends to reduce rapidly to a remolded strength value like a sensitive clay.



- (4) Moisture-density determinations are very difficult due to the bound water molecules in the mineral structure.

The conclusions reached by Dames & Moore based on the test data and field observations are as follows:

- (1) The creep consolidation of gypsum material could cause liquefaction and complete loss of strength.
- (2) The application of load to a gypsum pond would cause excessive differential settlement.
- (3) Seepage water from ponds placed on gypsum ponds could cause solutioning of the gypsum and differential settlement.

### 3.2 MY OPINION OF GYPSUM MATERIAL CHARACTERISTICS

In my work with gypsum disposal ponds in Idaho, Mississippi, California, and Alberta, Canada, I have developed a somewhat differing view from the opinions in the Dames & Moore report. My opinion of the test data is as follows:

- (1) There is cementation in all gypsum disposal materials that I have observed.
- (2) The cementation causes sample disturbance that must be considered in testing.
- (3) The most likely characteristics of in-place gypsum would be high cohesion and a moderately low angle of friction.
- (4) The creep consolidation is likely breaking the cementation of the sample and filling in the voids created by sampling.
- (5) The moisture-density problem is a fill control issue which will be resolved by the recommended test fill placement.

My conclusions on the gypsum materials are as follows:

- (1) Gypsum material that has had time to consolidate and to cement is not the type of material that would be subject to liquefaction; all gypsum material will have a lower remolded strength when subjected to high strain but will not liquefy and will increase and regain its original strength with time. (I have seen an overtopped embankment where the embankment fill soils failed but the gypsum material remained.)

- (2) Creep consolidation of gypsum should not be more than the normal consolidation, should be essentially uniform, and should not cause damage to the clay cap or the revegetated surface of the closure impoundment. (The chances of having wide variations in a hydraulically deposited material that would cause differential settlement are small.)
- (3) The surface cracking and sinkhole development in gypsum ponds are most likely a near surface condition that will not occur where any appreciable surcharge loading and limited water access exists.

### 3.3 FIELD STUDIES ON GYPSUM PONDS

As has been suggested in the respective RDRs, field studies and tests are warranted to evaluate site conditions and procedures. Such field studies and tests will serve to verify the actual field conditions and will serve to substantiate the opinions and conclusions presented. In particular, the gypsum moisture-density problem described earlier is a field quality control issue, which can be resolved by construction of a test fill. Furthermore, the test fill will serve to resolve the issues regarding settlement of gypsum materials and placement\compaction of grading fill and capping materials. The program described below consists of a test fill on the A-5 (or A-4) surface which includes grading fill, gypsum and capping materials placed in one field program. However, this program could be divided into two or three separate field programs, such separation better suits project needs. Separate test programs would provide the same data and achieve the same objectives. My recommendations for this test fill are as follows:

- (1) Place backhoe pits and a boring in Gypsum Pond A-1 located in areas where the expected worst water conditions exist. (A large backhoe that can excavate to a depth of 20 to 25 feet should be used; however, the actual depth of each pit must be determined in the field. The boring should penetrate the gypsum at its

- deepest point. Bulk samples should be obtained at five foot intervals as the pits are excavated. The boring should be sampled at five foot intervals and a series of laboratory tests performed on the samples.)
- (2) Also place backhoe pits in Gypsum Pond A-4 located in areas where the expected worst movement and water conditions exist. (A large backhoe that can excavate to a depth of 20 to 25 feet should be used; however, the actual depth of each pit must be determined in the field. Bulk samples should be obtained at five foot intervals as the pits are excavated.)
  - (3) Construct a fill on Gypsum Pond A-5 or A-4 to the height of the final fill on the pond (Utilize sections of gypsum, grading fill, and clay cap materials. The gypsum and the grading fill should be compacted to 85 percent of the maximum Modified Density and the clay cap should be compacted to 90 percent of the maximum Modified Density.)
  - (4) Conduct the following tests on the gypsum fill:
    - (a) Compaction tests (Run enough compaction tests to establish that the gypsum can be compacted to a controlled density.)
    - (b) Compactive effort required (Pre-condition some of the gypsum in Gypsum Pond A-1 to a uniform moisture at or near optimum moisture prior to hauling it to the test fill site and condition some of the gypsum on the fill site. Determine the compactive effort needed to compact the fill by checking the density with nuclear density equipment and counting the passes of the compaction equipment. Use sand cones to check, occasionally, on the nuclear equipment.)
  - (5) Conduct the same tests on the grading fill as for the gypsum fill
  - (6) Conduct the same tests on the clay cap fill as for the other fill except add field permeability tests
  - (7) Establish settlement monuments for the fill to record settlement of fill (One of the monuments should be established prior to placing of any fill to record settlement of the pond surface only.)
  - (8) Record and evaluate settlement data from the monuments until the data matches an established curve (Settlement readings should be on a weekly basis for the first two months and then lengthened to monthly for the remainder of the observation period. An observation period of six months is anticipated.)

4.0 FUTURE EVALUATIONS

I will be available to provide further review of the test fill and of any other geotechnical questions that may arise during the design phase of the Bunker Hill Superfund project.

Respectfully submitted,



George C. Toland  
PE 1333 State of Idaho

GCT/ht

DECEMBER 20, 1994

BUNKER HILL  
REMEDIAL DESIGN and REMEDIAL ACTION  
A-4 GYPSUM POND SUBAREA  
STATEMENT OF WORK

1.0 INTRODUCTION, DEFINITIONS, AND GENERAL PROVISIONS

1.1 Introduction

This Statement of Work ("SOW") is one of two detailing the on-site activities to be undertaken by the Settling Defendants in compliance with the requirements of this Consent Decree. This SOW address only that portion of work for which Stauffer Management Company and Rhone-Poulenc, Inc. (the "Stauffer Entities") are responsible. The area of Work for which the Stauffer Entities are responsible (the "Area") is delineated on the Bunker Hill Superfund Site Allocation Map (Allocation Map), Attachment C to the Consent Decree. The Work shall be consistent with the decisions set forth in the Bunker Hill 1991 Record of Decision and the Bunker Hill 1992 Record of Decision (collectively the "RODs") attached as Appendix A to the Consent Decree and performed pursuant to the Consent Decree.

The Work shall be structured to allow the most expeditious implementation of actions in a coordinated sequence that integrates remediation goals and minimizes short-term impacts and disruptions to the affected communities. The Work shall be organized as described below. The Work is further described in the Draft Gypsum Pond A-4 Closure Remedial Design Report (RDR), which is attached to the Consent Decree as Attachment G.

1.2 Definitions

Terms used in this SOW are as defined below or, when not defined herein, by this Consent Decree, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP).

- 1.2.1 "Clean Soil" shall contain mean concentrations less than 100 ppm lead, 100 ppm arsenic and 5 ppm cadmium. No single sample shall exceed 150 ppm lead.

1.3 General Provisions

- 1.3.1 The Work activities and related operation and maintenance requirements associated with this SOW are final remedial actions. Remedial actions outlined in this SOW shall meet Performance Standards.
- 1.3.2 The Stauffer Entities will begin performance of the Work as described in Section 5.0 of this document. The Stauffer Entities will not, however, be required to commence construction or sampling until this Consent Decree has been entered by the Court.
- 1.3.3 The Work, or any portion of the Work shall be integrated and coordinated in a manner consistent with all other Work under this Consent Decree, and with all operations and/or tasks undertaken by others, including, but not limited to, emergency response activities.

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- 1.3.4 Any repairs required to community infrastructure, such as roads and utilities, due to the implementation of the Work, shall be performed in a timely manner to ensure minimum disruption to the community.
- 1.3.5 Whenever the Stauffer Entities are obligated to perform an activity under this SOW, they may perform the activity themselves or engage a contractor (or contractors) accepted by EPA, unless other arrangements are mutually agreed upon, in fulfillment of their obligation.
- 1.3.6 During remedial construction activities, dust control measures shall be implemented to control the transport of contaminated material. Dust control activities shall include, but not be limited to, engineering and construction practices, the use of water to wet down areas or polymeric, chemical or physical surface sealers for temporary dust control.
- 1.3.7 Appropriate controls shall be used to prevent exposures to hazardous substances during performance of the Work. Access controls shall include, but not be limited to, fencing and signs. Access control shall be maintained in all areas where it currently exists.
- 1.3.8 Appropriate controls shall also be applied, as necessary, to restrict access to potential source areas, to control transport of contaminants and to control exposures to contaminants of concern during construction activities.
- 1.3.9 Best Management Practices shall be employed during remedial actions and the practice of not scheduling Work activities during periods of high storm water runoff shall be continued.
- 1.3.10 The objective of routine site maintenance is to ensure that facilities and control measures in the Area continue to be effective and achieve Performance Standards over the long term.
- 1.3.11 Work performed shall minimize operation and maintenance (O&M) requirements. A comprehensive post-closure O&M program will be defined during Remedial Action through preparation of a post-closure O&M Plan.
- 1.3.12 In the event of any action or occurrence arising in connection with the performance of the Work which causes or threatens to cause a release from the Area that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, the Stauffer Entities shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the Project Coordinators for EPA and the State, or, if they are unavailable, their alternates. Where such a threat is identified, the Emergency Response provisions of the Consent Decree will apply.
- 1.3.13 The Stauffer Entities shall respond to conditions related to the Work identified by EPA as posing an immediate hazard (imminent and substantial threat) within 24 hours of notice and to less immediate hazards in a timely manner, unless otherwise provided in the Consent Decree.

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2.0 DESCRIPTION OF WORK TO BE PERFORMED, PERFORMANCE  
STANDARDS AND OBJECTIVES

This Section sets forth the Stauffer Entities' portion of Work to be performed pursuant to this Consent Decree and states the Objectives and Performance Standards for the Work. This Work is to be conducted within the boundaries of the Area presented in the Allocation Map. The following Elements of Work are intended to provide a synopsis of the pertinent remedial actions that are explained in additional detail in the RODs. The Draft Gypsum Pond A-4 Closure Remedial Design Report, Attachment G to the Consent Decree, describes the Work in more detail.

A primary objective for remediation of the Area is the reduction or prevention of contaminant migration from the gypsum to groundwater, surface water and air. This objective shall be addressed through a series of remedial actions for the Area. The remedial actions described below comprise a comprehensive remedy consisting of a combination of containment, engineering and institutional controls.

2.1 Gypsum Pond A-4 Closure

The Gypsum Pond A-4 Closure Work is described in the Draft Gypsum Pond A-4 Closure RDR, including closure of the Gypsum Pond A-4 impoundment, conveyance of Magnet Gulch drainage across the Gypsum Pond A-4 Closure to Bunker Creek and conveyance of Deadwood Gulch drainage past the Gypsum Pond A-4 Closure to Bunker Creek.

The principal objective of remediation activities at Gypsum Pond A-4 is to reduce or eliminate contaminant migration from the gypsum in the Area to ground water, surface water and air. This objective will be achieved through the following remedial actions:

- removal of the upper portion of the existing Gypsum Pond A-4 embankment above the level of the existing surface of the impounded gypsum and regrading the downstream face of the embankment, to enhance the stability of the structure and reduce surface erosion;
- placement of a compacted layer of granular fill over the impounded gypsum, with the final surface of the fill graded so as to promote positive drainage off the closure area and to reduce the possibility of future ponding and resultant infiltration of rain water and snow melt into the underlying gypsum;
- placement and vegetation of a cover layer of growth medium or topsoil over the graded fill and the exposed downstream face of the stabilized embankment;
- construction of a lined channel along the west edge of the Gypsum Pond A-4 Closure area, as well as an appropriately sized culvert under McKinley Avenue, complete with upstream headwall, seepage barrier to restrict percolation under McKinley Avenue into the closure area and downstream erosion protection apron, and an armored or reinforced concrete spillway down the face of the embankment at the west abutment, to convey Magnet Gulch storm flows from McKinley Pond to Bunker Creek;

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- realignment, upgrading and construction, as necessary, of a channel, extending from the north side of McKinley Avenue to Bunker Creek, to carry Deadwood Gulch flows past the Gypsum Pond A-4 Closure area; and
- construction of runoff/runoff control ditches, berms and discharge spillways, as necessary, around the perimeter of the Gypsum Pond A-4 Closure area.

The performance standards that apply to the identified components of work for the closure of the Gypsum Pond A-4 Closure include:

- grading of the closure fill such that the surface slope is not less than two (2) percent and not greater than five (5) percent;
- provision of a minimum aggregate cover thickness of twelve (12) inches, including a minimum of six (6) inches of clean soil overlying a minimum of six (6) inches of grading fill; and
- sizing of drainage channels and appurtenant works to accommodate the runoff flow and erosive forces resulting from the 100-year, 24-hour storm event.



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### 3.0 DESCRIPTION OF PLANS AND REPORTS

The following list, which identifies plans and reports which may be submitted during the RD/RA for the Work, reflects the current status of the project and unique aspects of the Bunker Hill Site. Considerable progress has already been made on the RD process. A Draft Remedial Design Report (RDR), which addresses in detail the remediation requirements set forth in this Statement of Work, is attached to the Consent Decree. This RDR addresses many of the Components and information requirements set forth in RD/RA guidance. In addition, specific planning and reporting requirements have been developed which correspond to the RDR and further information to be generated in the RD/RA Process.

This Section is intended to provide a framework for developing plans and reports for the Work, and is not intended to be a prescriptive explanation of their content. Other information and requirements may be prescribed by EPA or the State through the review of the deliverables and other documents prepared by the Stauffer Entities under this Consent Decree. Unless otherwise specified, the description is not meant to distinguish between draft and final versions of the documents.

#### 3.1 Listing of Plans and Reports

The following is a list of the plans and reports described in this Section. Upon EPA's request any of these may be submitted in electronic form. This Section then sets forth a description of the types of information that should be included in the listed plans and reports.

- General Project Management
  - Project Management Monthly Reports
  - Technical Memoranda
- Remedial Design
  - Draft Remedial Design Report
  - Final Remedial Design Report
  - Sampling and Analysis Plan, Quality Assurance Project Plan and Health and Safety Plan as appropriate or as determined necessary by the Agencies.
- Remedial Action
  - Remedial Action Work Plan
  - Sampling and Analysis Plan, Quality Assurance Project Plan and Health and Safety Plan as appropriate or as determined necessary by the Agencies.
  - Construction Completion Report
  - Completion of Remedial Action Certification Report

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- Completion of the Work Report
- Gypsum Pond A-4 Operation and Maintenance (O&M) Plan

### 3.2 General Project Management

#### 3.2.1 Project Management Monthly Reports

The Project Management Monthly Reports shall be a consolidated status report on all Work. The Reports shall include, but are not limited to, the following basic information:

- Activities/tasks undertaken during the reporting period, and expected to be undertaken during the next reporting period.
- Summary of sampling and analysis data generated in connection with implementation of the Work.
- Deliverables and milestones completed during the reporting period, and expected to be completed during the next reporting period.
- Status of the overall project schedule and any proposed schedule changes.
- Summary of approved modifications or variances to work plans or schedules for the Work.

#### 3.2.2 Technical Memoranda

The Technical Memoranda are the mechanism for requesting modification of plans, designs, and schedules. Technical memoranda are not required for non-material field changes that have been approved by EPA. In the event that the Stauffer Entities determine that modification of an approved plan, design, or schedule is necessary, the Stauffer Entities shall submit a written request for the modification to the EPA Project Coordinator which includes, but is not limited to, the following information:

- General description of and purpose for the modification.
- Justification, including any calculations, for the modification.
- Proposed actions to be taken to implement the modification, including any actions related to subsidiary documents, milestone events, or activities affected by the modification.
- Recommendations.

### 3.3 Remedial Design

#### 3.3.1 Draft Remedial Design Report

A Draft Remedial Design Report (Draft RDR) has been prepared for the Work to further define the scope of the Remedial Actions required by

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the RODs. The Gypsum Pond A-4 Closure RDR provides the approved conceptual design for the Work and presents the objectives and Performance Standards to be applied and design considerations suggested by recent field investigations.

### 3.3.2 Final Remedial Design Reports

The Final Gypsum Pond A-4 Closure RDR will be based upon the approved conceptual designs presented in the Draft RDR. The Final RDR represents the 100% design final plans and specifications, and shall include the basic information described for the Draft RDR in addition to incorporating any changes necessary that arise from EPA's comments and modifications. The Final RDR shall include the following:

- Design drawings.
- Design specifications.
- Design calculations.
- Design quality assurance considerations.
- General design concept and criteria of facilities to be constructed.
- Description of existing facilities and identification of any that will be altered, destroyed, or abandoned during construction.
- Description of off-site facilities required or affected.
- Analysis/discussion of Performance Standards and how they have been incorporated into the design.
- Design parameters dictated by the Performance Standards.

## 3.4 Remedial Action

### 3.4.1 Remedial Action Work Plan

The Remedial Action Work Plan shall provide for the construction of the remedy, in accordance with the SOW, as set forth in the design plans and specifications in any approved final design submittals required by the RDR. The Remedial Action Work Plan shall be the primary plan to control and guide the construction of the Elements or Components of Work performed by the Stauffer Entities under this Consent Decree.

The Remedial Action Work Plan shall include, but not be limited to, the following:

An overall description of the work to be performed with cross-references to other documents, if any, containing more specific details.

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- The technical approach for undertaking, monitoring, and completing the Element or Component of Work. The discussion should include a description of the procedures, specific activities and objectives of such activities, and facilities to be installed; the Performance Standards; identification of and plans for obtaining any necessary off-site access, permits, or approvals; and identification of and plans for any materials requiring disposal.
- A description of the deliverables and milestones.
- A construction schedule.
- Construction O&M requirements.
- Plan for integrating, coordinating, and communicating with EPA, IDHW, and other government officials.
- Quality assurance measures including:
  - Audits.
  - Routine procedures, including internal quality control checks.
  - Corrective action procedures.
  - Construction-related QA/QC.
- Additional health and safety measures.
- QA/QC measures shall be in accordance with EPA guidance, including "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans", December 1980, (QAMS-005/80); "Data Quality Objective Guidance", (EPA/540/G87/003 and 004); and appropriate EPA Region 10 guidance.

#### 3.4.2 Health and Safety Plan

A Remedial Action Health and Safety Plan shall establish health, safety, and emergency response procedures for field activities to be performed by the Settling Defendant. The Plan shall conform to applicable or appropriate Occupational Safety and Health Administration (OSHA) regulations, requirements, and guidance. The Plan, in conjunction with the above-referenced Remedial Action Work Plan, shall include, but not be limited to, the following basic information:

- Overall description of the Plan, including purpose and a general description of the Elements or Components of Work covered by the Plan.
- Emergency and post-emergency procedures, including the designation of the Stauffer Entities' emergency response coordinator.

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- Standard job site health and safety considerations and procedures, including hazards evaluation and chemicals of concern.
- Communication and notification procedures within the Stauffer Entities' organization, and with EPA, State, other government officials, and community members.
- Personal Protective Equipment and instructions/procedures to ensure personnel protection and safety.
- Monitoring plans.
- Medical surveillance programs and training.
- Recordkeeping and reporting procedures.

#### 3.4.3 Construction Completion Report

The Construction Completion Report certifies the completion of construction of the Work. The report will provide evaluations of completion of Work relative to the scope outlined in the Work Plan. The Report shall include, but is not limited to, the following:

- Overall description of the Report, including purpose and a general description of the Work covered by the Report.
- Overall description of the Work and all associated facilities, appurtenances, and piping.
- As-built plans or plot plans and specifications including:
  - Construction QA/QC records.
  - Summary of any modifications implemented by Technical Memoranda.
- An Idaho-registered Professional Engineer must sign and stamp as-built plans.

#### 3.4.4 Completion of Remedial Action Certification Report

The Completion of Remedial Action Certification Report shall be submitted upon completion of all Work and achievement of Performance Standards. This report shall serve as the Stauffer Entities' documentation supporting completion of the remedial actions and achievement of the Performance Standards and request for certification from EPA for approval, with a copy to the State, pursuant to Paragraph 52 of the Consent Decree. The Report shall include, but are not limited to, the following information:

- Overall description of the Report, including purpose and a general description of the Work including the Components of Work covered by the Report. The general description shall include a description of

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the Work that was undertaken, objectives, period of operation, and Performance Standards.

- Findings and results of the pre-certification inspection, including supporting documentation that the Performance Standards, as appropriate, have been met.
- Contingency plans in the event that stated Performance Standards cannot be achieved in all areas.
- Cross-references to the Construction Completion Report(s), which presents as-built drawings, corresponding to the Elements or Components of Work addressed by the Completion of Remedial Action Certification Report.
- Demonstration that all obligations under this SOW and RDR have been satisfactorily completed or achieved by the Stauffer Entities in accordance with the Consent Decree.
- A statement by the Stauffer Entities' Project Coordinator that Remedial Action has been completed in full satisfaction of the requirements of the Consent Decree.
- A statement by an Idaho-registered Professional Engineer that the Remedial Action at Gypsum Pond A-4 has been completed in full ~~satisfaction of this SOW and the RAWP.~~ *compliance with the design standards & specs.*

3.4.5 Completion of the Work Report

This report shall be submitted after all phases of the Work (including any O&M obligations required by the Consent Decree) have been completed in full satisfaction of the requirements of this Consent Decree. Requirements of this report are set forth in Paragraph 53 of the Consent Decree. The Report shall comprehensively present the certifications by the Professional Engineer and Project Coordinator previously required for the Completion of Remedial Action Certification Report. Subsequent actions of the Stauffer Entities, such as O&M requirements, will be evaluated. If, after review, the Stauffer Entities believe that the Work has been completed in full satisfaction of the Consent Decree, the report shall be submitted containing the following statement, signed by a responsible corporate official of the Stauffer Entities or the Stauffer Entities' Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

DECEMBER 20, 1994

3.4.6 Operation and Maintenance (O&M) Plan

A plan addressing long-term operation and maintenance requirements for all aspects of Gypsum Pond A-4 Closure shall be prepared. This document shall reflect the specific post-remediation activities required to maintain remedy effectiveness and shall include, but not be limited to:

- Operational procedures.
- Operational emergency response.
- Maintenance procedures and schedules.

The Operation and Maintenance requirements for the Gypsum Pond A-4 Closure shall be consistent with land use of the Area as a closed but otherwise unimproved facility, regardless of the land use or overall site conditions after the closure of Gypsum Pond A-4.

DECEMBER 20, 1994

#### 4.0 DELIVERABLES

This section presents listings of deliverables associated with the Work.

##### 4.1 Remedial Design

The following separate deliverables, for the corresponding Elements of Work, apply to Work conducted through completion of the remedial design:

- Draft Gypsum Pond A-4 Closure RDR
  - Draft Remedial Design Report (Attachment G to Consent Decree)
  - Final Remedial Design Report

*Draft Final RDR*

##### 4.2 Remedial Action

The following deliverables will be required after completion of the remedial design phase:

- Draft Remedial Action Work Plan
- Final Remedial Action Work Plan
- Monthly Progress Reports
- Construction Completion Report
- Completion of Remedial Action Certification Report
- Operation and Maintenance Plan

##### 4.3 Health and Safety Plan

In addition to the above reports a Health and Safety Plan is also recognized as a deliverable.

##### 4.4 Completion of Work Report

A Completion of Work Report will also ultimately be prepared.



DECEMBER 20, 1994

## 5.0 PROJECT SCHEDULE

This section provides:

- a schedule for all significant milestone events and activities; and
- a list of all deliverables and a master schedule for the production of these deliverables.

### 5.1 Gypsum Pond A-4

The attached Gypsum Pond A-4 - Remedial Action Sequence and General Schedule provides a basis for scheduling and subsequent deliverables/milestones. The controlling activities are the finalization of the Final Gypsum Pond A-4 Closure RDR and the Gypsum Pond A-4 Closure Remedial Action Work Plan. A Draft Final Gypsum Pond A-4 Closure RDR will be submitted within 90 days of the entry of the Consent Decree. A Draft Gypsum Pond A-4 Closure Remedial Action Work Plan will be produced within 180 days after approval of the Final Gypsum Pond A-4 Closure RDR, subject to confirmation of proposed remedial actions in areas upstream of and adjacent to the Area. A construction schedule will be provided in the EPA-approved Final Gypsum Pond A-4 Closure RDR. A Construction Completion Report will be provided within 60 days of completion of the remedial activities, and a Pre-Certification Inspection will be conducted within 90 days of concluding that the applicable Performance Standards have been attained. The Completion of Remedial Action Certification Report for Gypsum Pond A-4 Closure will be submitted within 30 days of the Pre-Certification Inspection.

### 5.2 Initial Planning Efforts

The Stauffer Entities will begin work on preparation of the following deliverables at the time of entry of the Consent Decree, in accordance with the schedule set forth in this SOW:

- Monthly Progress Reports
- Technical Memoranda (as needed)
- Final Gypsum Pond A-4 Closure Remedial Design Report
- Gypsum Pond A-4 Closure Remedial Action Work Plan
- Health and Safety Plan (as needed).

*Draft Final RDR*

**CONFIDENTIAL SETTLEMENT  
COMMUNICATION**

DECEMBER 20, 1994

**Gypsum Pond A-4 Closure - Remedial Action Sequence and General Schedule**

TASK	DEADLINE
• Monthly Progress Reports	tenth day of each month following the reporting period
• Draft Final Gypsum Pond A-4 Closure RDR	90 days after entry of the Consent Decree
• Final Gypsum Pond A-4 Closure RDR	45 days after receipt of comments on Draft Final
• Draft Gypsum Pond A-4 Closure Remedial Action Work Plan	180 days after approval of the Final RDR, and subject to confirmation of proposed remedial actions in upstream and adjacent areas
• O&M Plan including provision for funding required O&M activities	Prior to submittal of Construction Completion Report
• Construction Completion Report	60 days after completion of Construction
• Pre-Certification Inspection for Completion of Remedial Action Certification Report	within 90 days of concluding that Performance Standards have been attained for the Gypsum Pond A-4 Closure Element of Work
• Completion of Remedial Action Certification Report	within 30 days of Pre-Certification Inspection
• Pre-Certification Inspection for Completion of Work Report	within 90 days of concluding that all Work has been completed for the Gypsum Pond A-4 Element of Work
• Completion of Work Report	within 30 days of Pre-Certification Inspection

***Attachment H***

**Union Pacific Draft RAWP**

BUNKER HILL SUPERFUND SITE  
UNION PACIFIC AREA  
DRAFT REMEDIAL ACTION WORK PLAN

December 1994

Prepared For:

THE UNION PACIFIC RAILROAD

PREPARED BY:

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<u>Appendix</u>	<u>Title</u>
A	October 27, 1994 Letter Re Analytical Results for Bunker Hill Railroad Right-of-Way (ROW) Sampling
B	December 12, 1994 Technical Memorandum Re Lead Concentrations of Tailings

**Bunker Hill Superfund Site**  
**Union Pacific Area**  
**Draft Remedial Action Work Plan**

**1.0 INTRODUCTION**

This Remedial Action Work Plan (RAWP) presents the remedial designs and describes the corresponding remedial actions necessary to control risks to human health and contaminant migration from the main Union Pacific Area, as shown on Attachment D to the Consent Decree, in the Bunker Hill Superfund Site (Site). This document clarifies and refines concepts outlined in the 1991 and 1992 Records of Decision (RODs) and the Bunker Hill Remedial Action Statement of Work (SOW) and is provided as an Attachment to the Consent Decree. Specifically, this RAWP describes the remedial actions to be implemented, performance standards for remediation, operations and maintenance (O&M), future deliverables, and certification of the remedial action.

A Rights-of-Way (ROW) Remedial Design Report addressing Area I ROW was previously finalized and attached to the Upstream Mining Group (UMG)<sup>1</sup> Consent Decree as part of the Statement of Work for that portion of the Bunker Hill Site (MFG, 1994a). Per the Consent Decree, remedial activities in Area I are conducted on a year-by-year basis according to Residential Areas Annual Remedial Action Work Plans. The 1994 Residential Areas Annual Remedial Action Work Plan for Area I, a portion of which addresses ROW, has been prepared by the UMG and approved by the Environmental Protection Agency (EPA). Work described in the 1994 Residential Areas Annual Remedial Action Work Plan is ongoing.

The RROW and other ROW traversing the Bunker Hill Site are similar in some respects. For example, the setting, materials, and types of contaminants found in the RROW and other Site ROW are often the same. Portions of the RROW and other ROW were both built

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<sup>1</sup>

A consortium composed of Hecla Mining Company, ASARCO Incorporated, and Sunshine Mining Company.

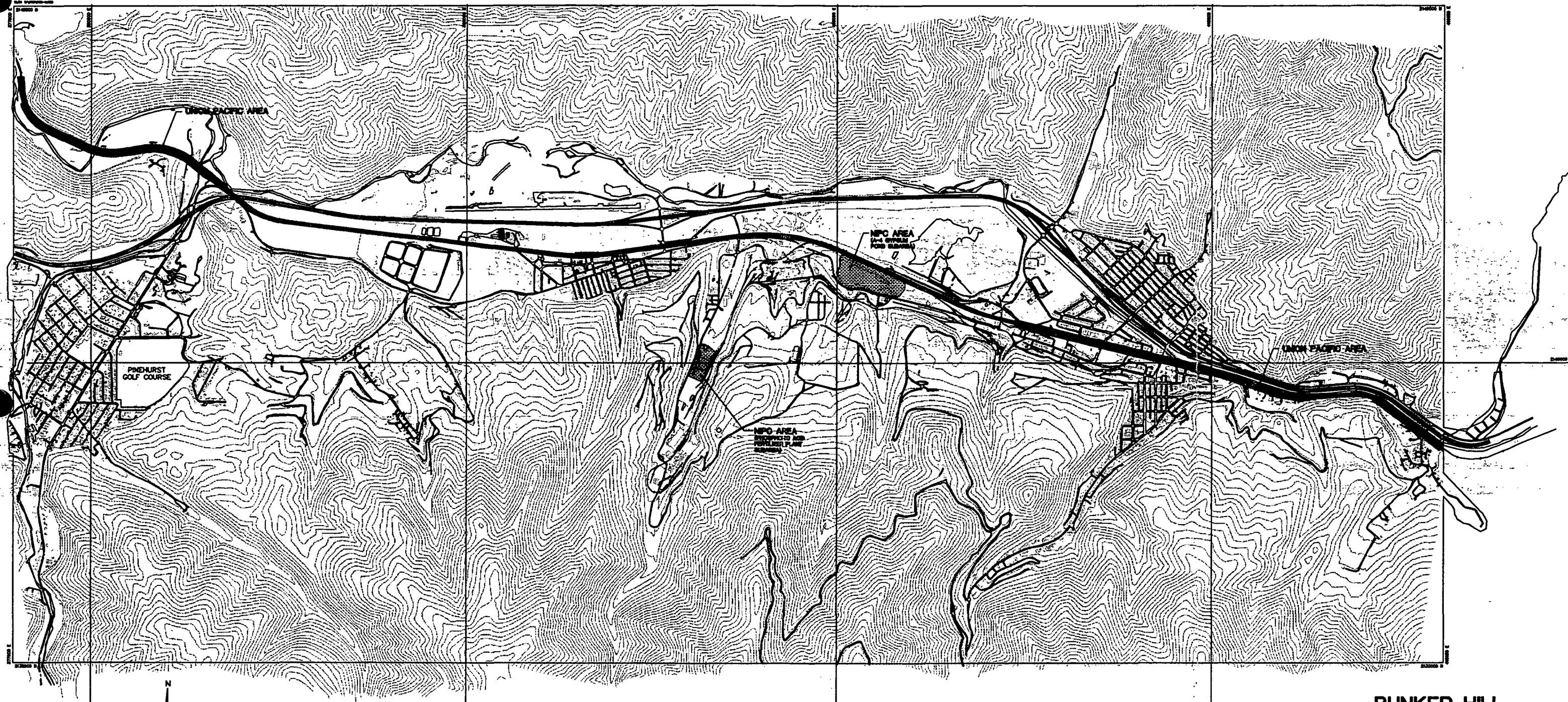
often the same. Portions of the RROW and other ROW were both built over mining tailings and waste rock and these materials were most likely used for construction fill, too, because of the widespread occurrence of tailings throughout the valley. Also, the risks posed to humans by both the RROW and other ROW vary along their lengths depending upon nature and extent of lead contamination and proximity to populated areas. Therefore, the previously prepared and approved Area I ROW Remedial Design Report and 1994 Residential Areas Annual Remedial Action Work Plan described above are used as a foundation for this RAWP. Design information for remediation of the RROW is included herein.

### 1.1 OVERVIEW

The Union Pacific Area is defined by the Bunker Hill Superfund Site Allocation Map (Allocation Map), Attachments B (Figure 1-1) and D of the Consent Decree. Currently, the RROW is not in use.

Ballast used as the track base to surface the RROW was imported to the Site from other areas. The imported ballast has been subject to conditions that have impacted soils in other areas of the Site, including deposition of smelter emissions, airborne and waterborne tailings, and, in addition to these site impacts, spilled concentrates. Lead concentrations occurring in ballast and soils on the RROW are similar to those in adjacent areas except for areas in which significant concentrate spills have occurred. Spill areas are thought to be principally located within the tie/track area. As noted below (Section 2.1), such concentrate spill areas are termed "hot spots" for the purpose of this RAWP. Concentrates produced by mills in the South Fork of the Coeur d'Alene River (SFCDR) Valley and transported through the Site were primarily those of lead. Concentrations of lead in ballast and soils on the RROW will be used in conjunction with land-use considerations and human-contact potential to establish the types of remediation required.





NOTE: The boundary of the Union Pacific Area as set forth on this attachment includes those areas in which the UPRR has a property interest and which: 1) are contiguous to the UPRR Wallace Branch main line; and 2) which have been clearly used by UPRR as a right-of-way as indicated by the presence of the track or ballast.

The railroad right-of-way shown on this Allocation Map is based on information obtained from the Right-of-Way and Track Map, Oregon-Washington Railroad and Navigation Company, Branch Line - Tekoa to Wallace, Drawing Idaho-3, Sheets 16, 17 and 18, June 30, 1919 (Revised December 31, 1927). If discrepancies exist between this Allocation Map and the Right-of-Way and Track Map, the latest revision of the latter shall govern.

# LEGEND:

- UNION PACIFIC AREA
- NPC AREA
- SITE BOUNDARY

## BUNKER HILL SUPERFUND SITE ALLOCATION MAP

DECEMBER 15, 1994  
ATTACHMENT B

The RROW traverses areas bounded by residential properties, commercial properties, industrial facilities, and open areas, including the river. Segments passing through the communities of Kellogg (including Elizabeth Park) and Smelterville total 1.5 and 1.2 miles, respectively. Approximately 1.5 miles of RROW passes through the Smelter Complex/Central Impoundment Area (CIA) corridor west of Kellogg. A majority of the remainder of the approximately 7.5-mile RROW length passes through the western end of the site including Smelterville Flats and the SFCDR corridor through the Pinehurst narrows to the western site boundary. This area does not appear to have been as heavily impacted as other areas of the site.

This RAWP specifically focuses on 1) providing procedures to establish the need for remediation and selection of the appropriate type of remediation for a given segment of the RROW; 2) providing basic designs for remediation of RROW segments that are consistent with remediation of surrounding areas and current land uses, and 3) presenting the criteria and procedures necessary for implementation of the basic designs. The remedial design for the RROW, and thus the remedial action, are consistent with those developed and used to remediate other Site ROW. As for other Site ROW, remedial activities planned for the RROW vary with the nature and extent of contamination, land use of the area through which the RROW passes, and the corresponding potential for human contact.

## 1.2 PERFORMANCE OBJECTIVES AND STANDARDS

The performance objectives of the remedial actions to be implemented on the RROW are to reduce the potential for direct contact and control the migration of contaminants from the RROW to air and water. These objectives will be achieved through attainment of the primary Performance Standard of enhancement or placement of a barrier consistent with adjacent land uses where lead concentrations are 1,000 ppm or greater in the top 6 or 12 inches of ballast and/or soil. Performance Standards for remediation of the RROW are as follows:

- All portions of the RROW with lead concentrations of 1,000 ppm or greater in the top 12 inches of ballast and/or contaminated soil shall receive, upon EPA approval in consultation with the State, one or more of the following treatments: barrier placement, removal/replacement, revegetation, and/or access control, dependent upon geographic location and current land use. Barrier type and thickness will also be determined based on geographic location, current land use, and the remedy applied in adjacent areas. The barrier selected and placed, will be in compliance with the Institutional Controls Program (ICP) barrier standards.

- Prior to other remedial activities, visually identified surface deposits of concentrates will be removed from the RROW to the extent practicable to minimize the potential for disturbance and the exposure risk posed by the accessible concentrate.

- Dust control activities will be conducted annually, as needed, until the RROW has been remediated.

- All ties will be removed for disposal in one of the Site closure areas made available to UPRR by the State and EPA. Each tie will be cut into 3 pieces, utilizing UPRR's automated track dismantling equipment, prior to disposal. The ties will be delivered to a staging area or specific closure area within the Site to be designated by the State and EPA. Rails will be decontaminated with a high-pressure wash and reused or recycled as scrap steel. Plates and spikes associated with the track may be disposed with the ties or recycled with the rails.

- Composite sampling over the length of the RROW will be used to guide remediation (excluding the Concentrator area where removal to 18 inches will occur). The RROW will be divided into three linear portions (strips) for sampling purposes: the central strip of the RROW, which comprises the track and ballast bed, and the remainder of the RROW on either side of the central strip. For areas where a single track is present, the width of the central strip will be 20 feet. For areas where double tracks are present, the width of the central strip will extend 6 feet beyond the edge of the ties. A site plan that shows total RROW width, strip widths, and sampling locations will be prepared for each 250-foot segment of the RROW as part of the Annual Remedial Action Implementation Plan (see Section 5.3.2).

- Subsamples will be collected along the center of each strip at a spacing of every 50 feet. At each location, subsamples will be collected at depth increments of 0 to

6 inches, 6 to 12 inches, and 12 to 18 inches. Composites made from 5 subsamples will be prepared for every 250-foot length of each of the three strips for each of the three depth intervals. For areas where double tracks are present, samples from the central strip will be collected alternately between each set of rails. Sample locations will be shown on the site plan for each 250-foot segment of the RROW.

- Using this approach, and assuming that approximately 35,000 feet of RROW within the Site requires sampling, approximately 1,260 composite samples (420 samples from each of the three depth increments for the three strips) will be submitted to a laboratory for lead analysis.

- The depth of removal required for each 250-foot strip of RROW will be based on the lead concentrations in the composite samples from its 0 to 6-inch, 6 to 12-inch, and 12 to 18-inch depth increments. The need for removal will be based on a threshold lead concentration of 30,000 ppm, which is representative of mine tailings and waste rock. For example, if the 0 to 6-inch interval in a given strip is 10,000 ppm, the 6 to 12-inch interval is 60,000 ppm, and the 12 to 18-inch interval is 20,000 ppm, removal for the 250-foot strip would occur to a depth of 12 inches. In addition, if during excavation activities along the RROW concentrates are visually identifiable below the planned removal depth, excavation will continue to the depth necessary to remove the visually identified concentrate.

- Following sampling and excavation, all areas of the RROW which have had removal actions will undergo verification sampling on 250-foot intervals to verify that lead concentrations above 30,000 ppm not attributable to tailings or waste rock have been removed prior to barrier placement. Verification sampling will consist of compositing 5 subsamples over each 250-foot interval, field sieving, and field analysis by x-ray fluorescence (XRF).

- The ROW adjacent to the Concentrator will undergo excavation and removal to a depth of 18", prior to placement of a protective barrier; excavated ballast and/or contaminated soil will be treated, as necessary, and disposed of in a Site closure area made available to UPRR by the State and EPA.
- Excavated ballast and/or contaminated soil will be sampled for lead concentrations prior to disposal. Testing for Principal Threat Criteria for excavated ballast and/or contaminated soil will be on composite samples passing a  $\frac{1}{4}$ -inch or less sieve fraction. Ballast and/or contaminated soil with concentrations in

excess of the Principal Threat Criteria of 84,600 ppm lead will require treatment prior to disposal.

- Excavated ballast and/or contaminated soil shall be consolidated under the Smelter Complex cap or in another area approved by the State and EPA in accordance with their Memorandum of Agreement (MOA). Remedial activities for the RROW will be coordinated with the Agencies' schedule for closure of the Smelter Complex and CIA. The coordination will address the placement of excavated RROW materials in these areas.

- Portions of the RROW adjacent to residential properties shall be treated utilizing barrier thickness criteria presented in the Residential Yards Remedial Design Report (MFG, 1994b). Remedial actions in these areas will result in a minimum 12-inch protective barrier over ballast and/or contaminated soil with lead concentrations of 1,000 ppm or more. No action will be required in those areas with lead concentrations less than 1,000 ppm.

- For those portions of the RROW not adjacent to residential properties, a 6-inch barrier will be placed, or another remedy consistent with the adjacent property, where a 1,000 ppm lead concentration criteria is exceeded. No action will be required in these areas with lead concentrations less than 1,000 ppm.

- Rock barriers, or another material which complies with the ICP, installed on the RROW will be screened to a median size ( $D_{50}$ ) of approximately 1½ inches, with no individual particle exceeding 3 inches in diameter.

- Where barriers are utilized, the barriers shall have sufficient durability to minimize future O&M requirements.

- The exact nature of remediation in specific segments of the RROW shall be determined on a case-by-case basis through the process outlined in this RAWP.

An additional design criterion is the successful establishment of vegetation for areas of the RROW assessed to require seeding. This criterion requires reseeding of previously seeded areas not achieving 85 percent cover in three years.

## 2.0 TECHNICAL ANALYSIS

This section provides a general overview of planned remedial activities for the RROW along with supporting technical analyses. Section 2.1 presents an overview of remedial actions to be implemented for various segments of the RROW and how these actions should meet the applicable Performance Standards. Related previous studies are discussed in Section 2.2.

### 2.1 REMEDY OVERVIEW

A summary of the remedial actions developed for contaminated portions of the RROW is provided below. These actions are essentially identical to those developed for other Site ROW, as described in the ROW Remedial Design Report (MFG, 1994a). These actions were developed using the Remedial Investigations (RI) (CH2M Hill, 1990a; MFG, 1992) for the populated and non-populated areas of the Site, the database accumulated through actions implemented under the 1991 and 1992 Administrative Orders on Consent (AOC), and data generated through independent studies conducted by Union Pacific. When matched properly with segments of the RROW requiring remediation, these actions are expected to meet the Performance Standards listed in Section 1.2. The Performance Standards identified in Section 1.2 were developed to address varying levels of lead contamination in the ballast and/or contaminated soils of the RROW, and a wide variety of land use/ownership and final grading requirements.

Remediation of the RROW is simplified relative to that of other Site ROW because the RROW is owned by a single entity. Also, grading requirements are simplified because the RROW comprises a continuous, narrow corridor through the Site floodplain. As such, barrier material generally can be uniformly added to the existing surface without creating inordinate drainage problems. Thus, except where hot spot removal or excavation is required, much of the RROW may be remediated through the installation of a barrier

without excavation of underlying material. The exact remediation activity will be dependent upon both the RROW sampling results and the neighboring land use of property adjacent to the RROW. In general, the following sequence of remedial activities will occur to provide the appropriate remedial action considering the RROW sample results and adjacent property land use. The Annual Remedial Action Implementation Plan will address the remedial activities planned for the year in detail.

Hot spot removal will address surficial deposits of concentrate on the RROW. Hot spots, or concentrate, can be identified as a grey, powdery substance. This will occur prior to railroad tie and rail removal and sampling along the RROW.

Sampling of the ballast and/or contaminated soils of the RROW, excluding the area at the Concentrator, will determine where and to

what depth excavation along the RROW will occur (see Section 3.1.2 for a detailed description of the sampling procedure).

Railroad tie and rail removal will occur with the decommissioning of the rail line and may occur before, during, and after sampling.

Depending on sample results from the sampling program, excavation of ballast and/or contaminated soils along the RROW with

concentrations of lead in excess of 30,000 ppm not attributable to tailings and/or waste rock will follow sampling and tie and rail

removal. Removal in the Concentrator area will occur after hot spot removal in this area. Verification sampling will be conducted

after excavation along the RROW to ensure removal of lead concentrations above those attributable to tailings and waste rock

in the RROW is complete. Excavated areas on the RROW will be backfilled, as necessary, using clean material. Following

backfill, where necessary, from hot spot removal and excavation, barrier installation will use a 6 or 12-inch rock cover or,

alternatively, 6 or 12 inches of clean soil followed by revegetation. Access controls may be used to augment the remedy.

The RROW will be remediated through excavation of elevated lead concentrations and the installation of barriers, thus, it is likely that significant reliance on access controls to limit human



exposure will not be necessary. The primary form of access control will be placement of barriers to restrict vehicle access to the RROW. An Institutional Controls Program (ICP) is currently being implemented by the communities in conjunction with the actions described above to limit the potential exposure to contaminated surface materials and to protect barriers from disturbance.

## 2.2 DISCUSSION OF PREVIOUS STUDIES/ACTIONS

The RROW within the Bunker Hill Site has been the subject of numerous investigations by Union Pacific and the State of Idaho (AGI, 1991; CH2M Hill, 1990a, b). Key activities recently conducted in support of RAWP development include sampling at depth along the RROW in the fall of 1994 (see Appendix A) (MFG, 1994c). Sampling has included concentrates, tailings, and screened ballast/soil from the RROW. Lead concentrations generally west of Kellogg and east of the Zinc Plant road, in areas corresponding to the Concentrator area and the Smelter Complex where concentrate loading and handling occurred, indicate that quantities of concentrate remain in these areas. This data correlates well with visual observations of concentrate along the RROW. Consequently, the Concentrator area is slated for removal.

Data from previous investigations also showed that elevated lead concentrations in the RROW vary with depth. Therefore, sampling along the RROW and at depth is specified in this RAWP in order to most effectively direct excavation (see Section 3.1.2).

The ROD for the Bunker Hill site requires removals of process materials exceeding concentrations associated with tailings or waste rock, and in order to limit unnecessary excavation of tailings which underlie the RROW in numerous locations, a threshold lead concentration must be identified for tailings and waste rock. Data from previous investigations, in conjunction with a literature review, were used to determine an appropriate lead concentration attributable to tailings and waste rock. A threshold lead



concentration of 30,000 ppm (3%) lead was selected as consistent with site-specific data from previous investigations as well as site-specific data documented in the literature (see Appendix B) (MFG, 1994d).

### 3.0 IMPLEMENTATION OF REMEDIAL ACTION

This section provides detailed descriptions of the remedial actions required on the RROW to meet the Performance Standards set forth in Section 1.2. The development of an Annual Remedial Action Implementation Plan to guide the remedial activities also is addressed. The remedial designs presented in this report are based upon and are consistent with previously approved designs for Area I ROW presented in the Final ROW Remedial Design Report (MFG, 1994a).

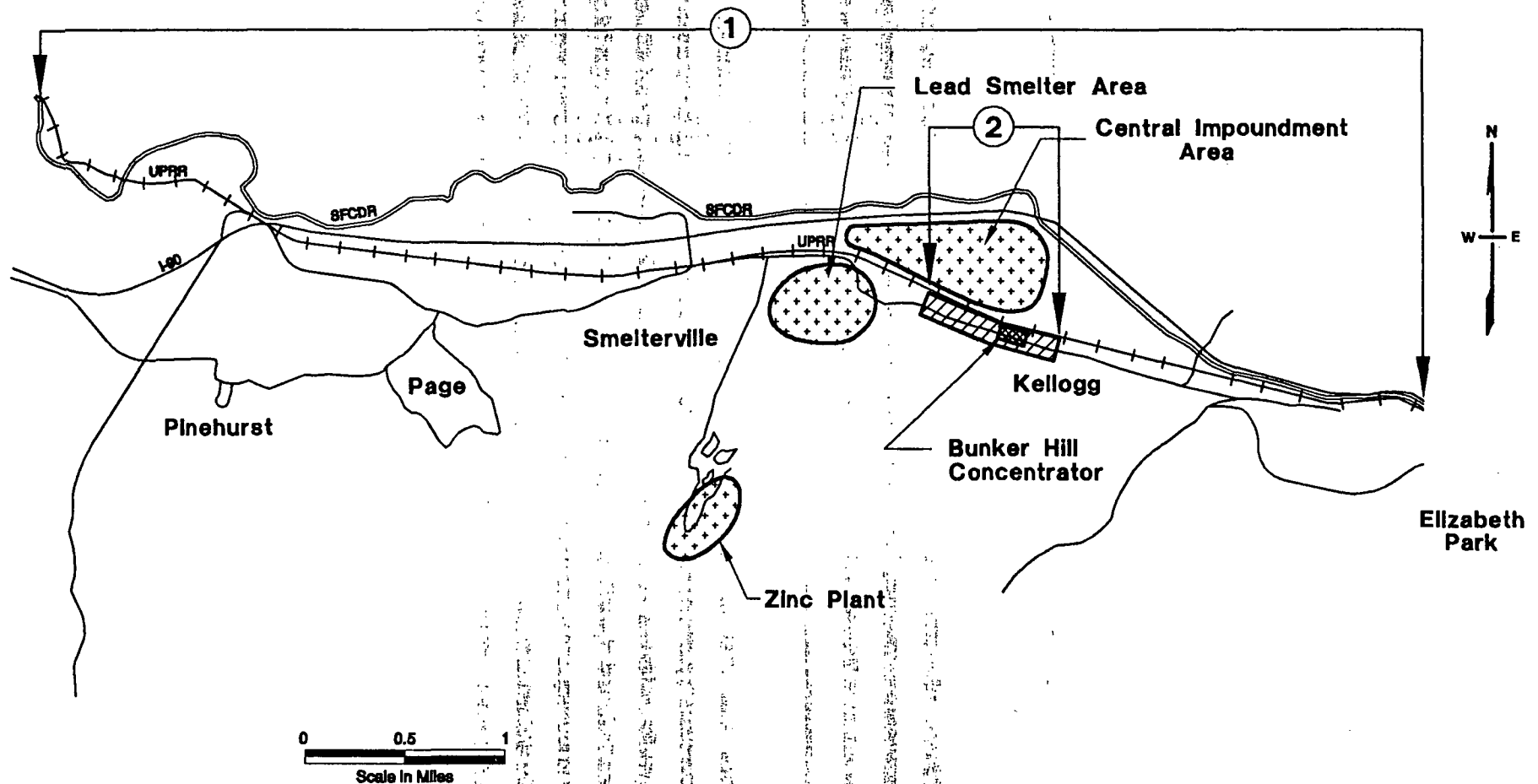
#### 3.1 REMEDIAL ACTIONS

The UPRR rail line traversing the Bunker Hill Site will be decommissioned, which will aid in the remediation of the RROW. All remedial actions will be conducted in accordance with a Sampling and Analysis Plan (SAP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP). Figure 3-1 provides a general overview of planned remedial activities for the RROW. It is anticipated that remediation of the RROW will commence on segments within the populated areas of the Site and then proceed to those segments in the non-populated areas. However, remediation will be scheduled to coordinate with EPA and State activities.

##### 3.1.1 Hot Spot Removal

Excavation of visually identified areas of concentrate ("hot spots") on the RROW will be conducted to the extent practical prior to railroad line dismantling in order to minimize the potential for disturbance during removal of the rails and ties. It is anticipated that a detailed walk through with representatives from the regulatory agencies will be conducted to identify these hot spots. These areas can be marked for removal with spray paint during the walk through. Prior to hot spot excavation, the target area may be wetted, as required, to limit dust generation. At the time of removal, excavation subcontractors will be directed by a

Union Pacific representative to assure removal is done correctly. Excavation activities will be implemented using small backhoes and hand implements while leaving the rails and cross ties in place. Care will be taken not to distribute the concentrates during removal and any materials spilled during excavation will be collected for disposal. The depth of hot spot excavation will be one foot, unless discoloration due to concentrates is clearly evident below that depth.



### EXPLANATION

+++ Union Pacific Railroad (UPRR)

① Railroad ROW remediation will include hot spot removal, railroad tie and rail removal, sampling, excavation, verification sampling, and placement of a 6" or 12" barrier, consistent with the remedy for adjacent areas.

② Railroad ROW will be remediated by hot spot removal, concentrator demolition and railroad tie and track removal, excavation of ballast profile to 18" in depth, verification sampling, and barrier placement. Exact length of segment to be determined during walk through with Agency representatives.

### REMEDIAL ACTION WORK PLAN Bunker Hill Superfund Site

#### SUMMARY OF PLANNED REMEDIAL ACTIONS

PROJECT: 5186	DATE: DECEMBER, 1994
REV:	BY: MEG CHECKED: SAW
McCULLEY, FRICK & GILMAN, INC. <i>providing environmental consulting and engineering services</i>	

Prior to removal in the Concentrator area, a limited hot spot removal program will be conducted to remove any concentrate piles or areas of obvious concentrate deposition which could be disturbed by the adjacent demolition activities. A dust control agent will also be applied to this area prior to the demolition activities. If necessary, Bunker Limited Partnership (BLP) will apply a dust control agent after demolition to disturbed areas.

If appropriate, and as an interim measure, excavated areas on the RROW will be backfilled using clean material, as necessary, which meets the concentration criteria specified in Section 3.1.8.1. Personal air monitoring will be conducted in accordance with the HASP.

Excavated ballast and/or contaminated soils will be transported by covered dump truck to the Smelter Complex cap or another area approved by EPA and the State. The excavated materials may be segregated into separate piles based on visual characteristics. The pile(s) will be sampled separately by collecting a composite sample from each stockpile, sieving the samples with a  $\frac{1}{4}$ -inch sieve, and submitting the samples for lead analysis. A Sampling and Analysis Plan, submitted with the Annual Remedial Action Implementation Plan, will detail the sampling procedures for the stockpiles. Materials with lead concentrations in excess of the Principal Threat Criteria (84,600 ppm lead) will be subjected to cement-based stabilization/fixation prior to disposal.

### 3.1.2 RROW Sampling

Composite sampling over the length of the RROW will be used to guide remediation (excluding the Concentrator area where removal to 18 inches will occur). The RROW will be divided into three linear portions (strips) for sampling purposes: the central strip of the RROW, which comprises the track and ballast bed, and the remainder of the RROW on either side of the central strip. For areas where

a single track is present, the width of the central strip will be 20 feet. For areas where double tracks are present, the width of the central strip will extend 6 feet beyond the edge of the ties. A site plan that shows total RROW width, strip widths, and sampling locations will be prepared for each 250-foot segment of the RROW as part of the Annual Remedial Action Implementation Plan.

Subsamples will be collected along the center of each strip at a spacing of every 50 feet. At each location, subsamples will be collected at depth increments of 0 to 6 inches, 6 to 12 inches, and 12 to 18 inches. Composites made from 5 subsamples will be prepared for every 250-foot length of each of the three strips for each of the three depth intervals. For areas where double tracks are present, samples from the central strip will be collected alternately between each set of rails. Sample locations will be shown on the site plan for each 250-foot segment of the RROW.

Using this approach, and assuming that approximately 35,000 feet of RROW within the Site requires sampling, approximately 1,260 composite samples (420 samples from each of the three depth increments for the three strips) will be submitted to a laboratory for lead analysis.

### 3.1.3 Railroad Tie and Rail Removal

All ties and rails will be removed for disposal in one of the Site closure areas made available to UPRR by EPA and the State. Each tie will be cut into 3 pieces, utilizing UPRR's automated track dismantling equipment, prior to disposal. The ties will be delivered to a staging area or specific closure area within the Site to be designated by EPA and the State. Rails will be decontaminated with a high-pressure wash and reused or recycled as scrap steel. Plates and spikes associated with the track may be disposed with the ties or recycled with the rails.

#### 3.1.4 Interim Dust Suppression

Following hot spot removal and tie and rail removal, segments of the RROW traversing populated areas of the site, crossings of the RROW with road ROW, and segments of the RROW adjacent to areas that have been or are being remediated, will be treated with a temporary dust suppressant as an interim measure. The dust suppressant will consist of a commercially available product such as lignin or magnesium chloride that will be sprayed onto the target area. The application rate will be based on the manufacturer's directions. The dust suppressant will be reapplied by UPRR as appropriate until the RROW is remediated and covered with a barrier.

#### 3.1.5 RROW Excavation and Disposal

The depth of removal required for each 250-foot strip of RROW will be based on the lead concentrations in the composite samples from its 0 to 6-inch, 6 to 12-inch, and 12 to 18-inch depth increments. The need for removal will be based on a threshold lead concentration of 30,000 ppm, which is representative of mine tailings and waste rock. For example, if the 0 to 6-inch interval in a given strip is 10,000 ppm, the 6 to 12-inch interval is 40,000 ppm, and the 12 to 18-inch interval is 20,000 ppm, removal for the 250-foot strip would occur to a depth of 12 inches. An exception to this example would be if it were found that the 40,000 ppm lead concentration was due to the presence of tailings or waste rock as opposed to concentrates. In addition, if during excavation activities along the RROW concentrates are visually identifiable below the planned removal depth, excavation will continue to the depth necessary to remove the visually identified concentrate.

Disposal of excavated materials will be at an area selected and provided by EPA. It is anticipated that a majority of the disposal will occur in the Lead Smelter area. Prior to disposal, the excavated materials will be staged and sampled for comparison

to the Principal Threat Criteria of 84,600 ppm lead. Depending upon the nature and origin of the excavated materials, the materials may be staged and sampled separately. Composite samples collected for analysis will be sieved through a  $\frac{1}{4}$ -inch mesh prior to analysis. The number of samples for a given pile will be dependent on the volume of the pile and will be described in the Sampling and Analysis Plan portion of the Annual Remedial Action Implementation Plan. Material with lead concentrations greater than the Principal Threat Criteria will be treated using cement-based stabilization/fixation prior to disposal.

### 3.1.6 Removal in the Concentrator Area

The Concentrator area of the RROW is where concentrates were loaded for rail transport. The Concentrator has a loading chute with several sidings for loading and staging. During a visual survey, large areas of spillage were noted along the siding area. The Concentrator area also corresponds to elevated lead concentrations in excess of concentrations associated with tailings or waste rock. Based on knowledge of past operations, available analytical results, and visual observations, the Concentrator area will undergo removal of ballast down to a depth of 18 inches across the RROW width. Timing for this activity will be dependent upon timing for the Concentrator demolition being conducted by Bunker Limited Partnership (BLP). Upon completion of the Concentrator demolition activities, removal of the RROW ballast will occur. Removal prior to the demolition activities in the Concentrator area would not be effective due to the potential for recontamination and disturbance. However, as mentioned above, any piles or obvious surface deposits of concentrates in the Concentrator RROW will be removed during the initial hot spot removal effort to minimize the potential for further distribution during the adjacent demolition activities. Figure 3-1 depicts the general area where removal will occur. The specific reach of RROW will be established during the walk through with Agency personnel and presented in the initial Annual Remedial Action Implementation Plan. Ballast and/or



contaminated soils excavated during the removal at the Concentrator area will be transported, treated, if necessary, and disposed in the same manner as for hot spot materials and other RROW excavated materials.

### 3.1.7 Verification Sampling

All portions of the RROW which have had removal actions will undergo verification sampling on 250-foot intervals to verify that lead concentrations above 30,000 ppm not attributable to tailings or waste rock have been removed prior to further remediation. A composite sample will be collected over every 250 linear feet of track along the RROW for a total of 140 composite samples, excluding the area at the Concentrator. The composite will represent 5 subsamples collected from the center of each 50-foot length along every 250 linear feet of track (i.e., at 50 feet, 100 feet, 150 feet, etc.) at the 0 to 6-inch depth. Each composite will be sieved and analyzed in the field by x-ray fluorescence (XRF).

If any sample result is greater than 30,000 ppm lead, the 250-foot section of the RROW associated with this sample will be evaluated to determine if the concentration is attributable to tailings or waste rock. This evaluation may include visual observation, historical information, and petrographic analyses. The outcome of this evaluation will be presented to EPA and the State with a recommendation as to whether additional excavation is required or the elevated lead concentrations are attributable to tailings or waste rock. If further excavation is warranted, the 250-foot section of the RROW with the elevated lead sample result will be resampled by XRF in 50-foot intervals to more accurately determine the area and depth to be excavated. If lead concentrations in samples from the excavated materials are greater than the Principal Threat Criteria, the materials will be treated by cement-based stabilization/fixation prior to disposal. Disposal will be in the same manner as for previously excavated hot spots

and excavated ballast and/or contaminated soils along the RROW. Excavated areas will be backfilled, where necessary, to grade using clean material and compacted, as necessary, prior to further remediation such as barrier placement.

### 3.1.8 Barrier Installation

Placement of a barrier on the RROW will occur after hot spot removal, tie and rail removal, and sampling and excavation along the RROW. Barriers will be installed in areas with greater than 1,000 ppm lead, including areas that have been excavated where remaining concentrations are greater than 1,000 ppm but less than 30,000 ppm. Installation of barriers should reduce risks from contaminated ballast and/or soils to humans and other receptors.

The primary barrier material that will be utilized on the RROW is rock<sup>2</sup>, although clean soil may be used in limited instances, or another material which complies with the ICP. Vegetation will be established on all clean-soil barriers, if such barriers are used. Sources of rock and clean-soil may vary depending on suitability and availability. The thickness of rock or clean-soil barriers will be a minimum of 12 inches on sections of the RROW that adjoin residential areas. For those segments of RROW that do not adjoin residential areas (e.g., much of Smelterville Flats), remediation will be implemented in a manner consistent with adjacent areas. Such remediation may include installation of a 6-inch rock or clean-soil barrier. For areas where existing vegetation is flourishing and cover is greater than 85 percent, decisions regarding the need for additional barrier will be made on a case-by-case basis in consultation with the State and EPA.

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<sup>2</sup>

Pavement may be used in lieu of rock-barrier material, at the discretion of Union Pacific. The thickness of the pavement will be dictated by the ICP.

### 3.1.8.1 Rock Barriers

Rock will be the primary barrier material used to remediate the RROW within the Bunker Hill Site because of its durability. It has also been selected because it will comprise a less attractive riding surface for motorcycles, relative to a soil barrier, and will thereby minimize unauthorized use of the RROW. Rock barrier material may consist of one or a combination of the following materials: mine waste rock, quarry rock, or gravel. However, at the option of Union Pacific, pavement or another material which complies with the ICP, may be used in lieu of a rock barrier. Rock used as a barrier material will meet the same specifications as for residential yard backfill (i.e., less than 100 ppm lead, 100 ppm arsenic, and 5 ppm cadmium, based on the average of sampling results, with no individual sample exceeding 150 ppm lead). Sampling for compliance with the concentration requirements will be similar to that for residential areas remediation activities (see Appendix B of the Residential Yards Remedial Design Report; MFG, 1994b). A comprehensive sampling plan will be conducted for all barrier materials. In summary, this program consists of collecting a sample for every 600 cubic yards of barrier material, and one duplicate quality assurance sample for every ten barrier samples. Rock barriers installed on the RROW will be screened to a median size ( $D_{50}$ ) of approximately  $1\frac{1}{2}$  inches, with no individual particle exceeding 3 inches in diameter.

Rock barrier material will be transported by truck to target RROW segments. A visual marker (such as a geotextile) is not needed beneath the rock barrier because the placed rock will be distinctive from underlying materials. At each target area, including the Concentrator area, the rock will be spread in a single lift using earth-moving equipment or railroad ballast application equipment to the specified 6 or 12-inch thickness. Dust control during transportation and application, if necessary, will be accomplished by wetting the application site using a water truck. Precautions will be exercised when grading to prevent

mixing of the base material with the rock barrier and limited rolling may be necessary to ensure even distribution. Rock barrier material will meet the specifications discussed above. The thickness of the finished rock barrier will be verified using methods that are consistent with those presented in Appendix E of the Residential Yards Remedial Design Report.

#### 3.1.8.2 Clean-Soil Barriers

Use of clean-soil barriers to remediate the RROW, if any, will be minimal. Should such barriers be needed, possible sources of acceptable clean-soil materials include topsoil from nearby areas and overburden from construction sites or other off-site sources. Clean soil will meet the same specifications as for residential yard backfill (see Section 3.1.8.1) and will be transported by truck to target segments of the RROW. At each target segment, the soil will be spread in a single lift by bulldozer or other suitable means to the specified 6 or 12-inch thickness. The thickness of the finished clean-soil cover will be verified using methods that are consistent with those presented in Appendix E of the Residential Yards Remedial Design Report. Dust control during transportation and application, if necessary, will be accomplished by wetting the transportation route and the application site using a water truck. Barrier material will be placed in early spring/summer to promote vegetation establishment prior to potentially erosive conditions occurring in winter.

#### 3.1.8.3 Revegetation

Where clean-soil covers are installed on portions of the RROW, they will be revegetated. Revegetation will consist of one or more of the following, which will be established on a site-specific basis:

- seeding of clean-soil covers; and/or
- direct seeding of the existing surface for areas not receiving a barrier to enhance existing vegetation.

Direct revegetation of existing RROW surface may be used as a barrier in those areas that are not readily accessible to the public and to augment existing vegetation.

Indigenous grasses primarily consisting of red top, but also including timothy, orchard grass, and Canada blue grass will be used in the revegetation program. This seed mixture will be applied at an approximate rate of 20 pounds Pure Live Seed per acre. Fertilizer and mulch, when required, will be applied at a rate of 400 pounds per acre and 1,000 pounds per acre, respectively. This application rate may also be varied depending on site-specific conditions. Seed certification will be required to ensure that the grass seed used does not create a weed problem in any nearby residential areas.

Seeding will take place in the late spring (approximately April 15 through June 15) to promote vegetative survival and establishment. Should weather or other site conditions preclude access during this time period, seeding may take place in the late fall. Experience in other parts of the Site indicates that seeds distributed in the late fall will remain dormant until the early spring, when germination occurs.

### 3.2 SITE PLANS

Site plans will be developed for the RROW as part of the Annual Remedial Action Implementation Plans (see Section 5.3.2). The site plan will be updated, as remedial activities proceed, to depict actual remedial measures taken and remedial actions planned for the next year. The site plan will indicate what segments of the RROW are to be sampled to determine where excavation will be conducted and to what depth, and include such information as total RROW width, strip widths within the RROW, and sampling locations.

When remedial activities are complete, the final site plans should provide the information required to support certification of remediation by EPA and the State. The final site plans will include the following information as well as a map of the RROW:

- the location of the RROW within the Bunker Hill Site;
- land uses in adjoining areas;
- the results of visual hot spot assessments;
- the locations of all identified and remediated hot spots and excavated areas, including areal extent, volume of ballast and/or contaminated soil removed, the final disposal site of the contaminated material and whether treatment was required, and the volume of clean material subsequently backfilled, if backfill was necessary;
- the analytical results from verification sampling;
- the areal extent of barriers installed, their composition (rock, ballast, clean soil, vegetation, or pavement), and thickness; and
- the results of a field verification program for barrier thickness.

#### 4.0 OPERATION AND MAINTENANCE

Regular inspection and maintenance of the RROW barriers will be conducted. Regulations imposed in connection with the ICP developed for the Bunker Hill Superfund Site are expected to ensure the continued, long-term operation and maintenance requirements by subsequent owners for the remediation activities addressed by this RAWP. The ICP will designate proper soil handling, pick-up, and disposal methods and will provide guidelines and requirements to ensure the long-term integrity of barriers installed as part of the RROW remediation program. In addition, the ICP will ensure that barriers appropriate for planned future use are utilized as land use changes. For the most part, the RROW lies in the floodplain and additional fill will most likely be required for future development. Therefore, removal and disposal of materials under barriers should not be a significant future activity.

Areas capped with a rock barrier will be inspected annually by Union Pacific to assess whether the barrier has been disturbed. Any disruptions to the rock barrier noted during these inspections will be repaired by Union Pacific. Invasion of vegetation will not be considered as a disturbance and, therefore, will not be removed. Areas assessed to exhibit excessive disturbance or erosion due to the material selected or the method by which it was placed will be mitigated using selective placement of additional rock or other barrier material. The selection of erosion control measures will be site-specific. Union Pacific will continue the annual inspections and associated barrier maintenance activities until the ownership of the RROW is transferred to other entities who assume this responsibility.

Segments of the RROW that are revegetated over the protective layer of clean soil will be inspected annually by Union Pacific to characterize progress. Inspection will include measurement of percent cover using a calibrated hoop. Revegetation success is defined as a minimum of 85 percent cover after three years of

growth. Areas of the RROW that are assessed to be inadequately revegetated within three years of seeding will be reseeded by Union Pacific. Annual inspections of the remediated RROW will be conducted until completion of the Work.

A plan addressing operation and maintenance (O&M) requirements for all aspects of the RROW shall be prepared and included in the Post Closure O&M Plan. This document shall reflect the specific post-remedial activities required to maintain remedy effectiveness and shall include, but not be limited to:

- Identification of maintenance contractor with name, address, and telephone number of individuals responsible for maintenance
- Operational procedures
- Operational emergency response
- Maintenance procedures and schedules

A RROW annual inspection procedure will also be developed, which will include a check list of key inspection criteria.



## 5.0 FUTURE DELIVERABLES (PLANS AND REPORTS)

The following described plans and reports will be submitted to the Idaho Department of Health and Welfare (IDHW) and/or EPA in connection with remediation of the Union Pacific Area in the Bunker Hill Superfund Site.

### 5.1 GENERAL PROJECT MANAGEMENT

#### 5.1.1 Project Management Monthly Reports

The Project Management Monthly Reports shall be a consolidated status report on all Work. The Reports shall include the following basic information:

- Introduction, including the purpose and general description of the Work currently being conducted.
- Activities/tasks undertaken during the reporting period, and expected to be undertaken during the next reporting period.
- Deliverables and milestones completed during the reporting period, and expected to be completed during the next reporting period.
- Identification of issues and actions that have been taken or are being taken to resolve the issues.
- Status of the overall project schedule and any proposed schedule changes.

#### 5.1.2 Technical Memoranda

The Technical Memoranda are the mechanism for requesting modification of plans, designs, and schedules. Technical memoranda are not required for non-material field changes that have been approved by EPA and the State. In the event that UPRR determines that modification of an approved plan, design, or schedule is necessary, UPRR shall submit a written request for the modification

to the EPA and State Project Coordinators which includes, but is not limited to, the following information:

- General description of and purpose for the modification.
- Justification, including any calculations, for the modification.
- Actions proposed to implement the modification, including any actions related to subsidiary documents, milestone events, or activities affected by the modification.
- Recommendations.

## 5.2. REMEDIAL DESIGN

No further design submittals beyond this RAWP will be required for remediation of the Bunker Hill Site RROW.

## 5.3. REMEDIAL ACTION

Remediation of the Bunker Hill Site RROW will be conducted according to a Sampling and Analysis Plan (SAP), Quality Assurance Project Plan (QAPP), and a Health and Safety Plan (HASP) developed for remedial activities. These plans may be presented separately or incorporated as part of the Annual Remedial Action Implementation Plan. At this time, it is anticipated that the HASP will be a separate document while the QAPP and SAP will be included in the Annual Remedial Action Implementation Plan.

### 5.3.1 Health and Safety Plan

A Remedial Action Health and Safety Plan shall establish health, safety, and emergency response procedures for field activities to be performed by UPRR. The Plan shall conform to

applicable Occupational Safety and Health Administration (OSHA) regulations, requirements, guidance and/or applicable State and EPA requirements. The Plan, in conjunction with the Remedial Action Work Plan and Annual Remedial Action Implementation Plan, shall include the following basic information:

- Overall description of the Plan, including purpose and a general description of the Elements or Components of Work covered by the Plan.
- Emergency and post-emergency procedures, including the designation of UPRR's emergency response coordinator.
- Standard job site health and safety considerations and procedures, including hazards evaluation and chemicals of concern.

• Communication and notification procedures within UPRR's organization, and with EPA, the State, other government officials, and community members.

• Personal Protective Equipment and instructions/procedures to ensure personnel protection and safety.

• Monitoring plans.

• Medical surveillance programs and training.

• Record keeping and reporting procedures.

#### 5.3.2 Annual Remedial Action Implementation Plan

The Annual Remedial Action Implementation Plan shall include the following information for the Work to be conducted for the year:

- A general description of remedial activities to be conducted
- Site plans for segments to be sampled and/or remediated
- A detailed sampling and analysis plan
- A discussion of specific quality assurance (QA) procedures/plans

- A discussion of any special health and safety requirements
- A schedule for the Work to be conducted during the year
- An updated master project schedule

### 5.3.3 Annual Construction Completion Report

Remediation of the RROW may require more than one construction season to complete. Construction activities completed during each construction season will be summarized in an Annual Construction Completion Report. These reports will be submitted to the Agencies within 60 days after the construction activities for that construction season are completed. The Annual Construction Completion Reports will include updated site plans, as described in Section 3.2. The Reports shall include the following:

- Overall description of the Report, including purpose and a general description of the Element(s) or Component(s) of Work covered by the Report.
- Overall description of the Work.
- As-built plans or site plans and specifications including:
  - Construction Quality Assurance/Quality Control (QA/QC) records.
  - Summary of any modifications implemented by Technical Memoranda

### 5.3.4 Operation and Maintenance (O&M) Plan

A plan addressing operation and maintenance requirements for all aspects of the RROW shall be prepared. This document shall reflect the specific post-remedial activities required to maintain remedy effectiveness and shall include, but not be limited to:

- Operational procedures
- Operational emergency response
- Maintenance procedures and schedules

## 6.0 CERTIFICATION OF COMPLETION OF REMEDIAL ACTION

Certification of the completion of remedial action in the Union Pacific Area is defined as attainment of Performance Standards (outlined in Section 1.2) for the Union Pacific Area. The Completion of Remedial Action Certification Report shall serve as UPRR's documentation supporting completion of the Remedial Actions and attainment of the Performance Standards, and to request certification from EPA. The Report shall include, but is not limited to, the following information:

- Overall description of the Report, including purpose and a general description of the Work including the Components of Work covered by the Report. The general description shall include a description of the Work that was undertaken, objectives, period of operation, and Performance Standards.
- Findings and results of the pre-certification inspection, including documentation that the Performance Standards, as described by the Union Pacific Area SOW, have been attained.
- Cross-references to the Construction Completion Report(s), which present as-built drawings, corresponding to the Elements or Components of Work addressed by the Completion of Remedial Action Certification Report.
- A statement that the Remedial Action has been completed in full satisfaction of the SOW and RAWP.
- A statement by a registered professional engineer and UPRR's Project Coordinator that Remedial Action has been completed in full satisfaction of the requirements of the Consent Decree.
- Final site plans that present all information outlined in Section 3.2. Barrier thickness certification will be accomplished using methods consistent with those

presented in Appendix E of the Residential Yards Remedial Design Report (MFG, 1994b).

The Performance Standards for the Union Pacific Area are considered to be attained when:

- all visually identified hot spots are excavated, the excavated materials are placed in the Smelter Complex to be capped (following treatment if required) and the excavations are backfilled with clean material, where necessary; and
- the Union Pacific Area has been remediated consistent with the procedures provided in this RAWP.

## 7.0 REFERENCES

Applied Geotechnology, Inc. (AGI), 1991. Study of Lead Contamination along the Union Pacific Railroad Right-of-Way, AGI Project No. 14,942.015. Prepared for the Union Pacific Railroad. September 18, 1991.

CH2M Hill, 1990a. Residential Soils Focused Feasibility Study for the Bunker Hill CERCLA Site Populated Areas RI/FS in Applied Geotechnology, Inc. (AGI), 1991. Study of Lead Contamination along the Union Pacific Railroad Right-of-Way, AGI Project No. 14,942.015. Prepared for the Union Pacific Railroad. September 18, 1991.

CH2M Hill, 1990b. Phase II Remedial Investigation Data Summary Report for the Bunker Hill CERCLA Site in Applied Geotechnology, Inc. (AGI), 1991. Study of Lead Contamination along the Union Pacific Railroad Right-of-Way, AGI Project No. 14,942.015. Prepared for the Union Pacific Railroad. September 18, 1991.

McCulley, Frick & Gilman, Inc. (MFG) 1994a. Final Rights-of-Way Remedial Design Report. Prepared for the Upstream Mining Group, March, 1994.

McCulley, Frick & Gilman, Inc. (MFG) 1994b. Final Residential Yards Remedial Design Report. Prepared for the Upstream Mining Group, March, 1994.

McCulley, Frick & Gilman, Inc. (MFG) 1994c. Letter re Analytical Results for Bunker Hill Railroad Right-of-Way (ROW) Sampling, October 27, 1994.

McCulley, Frick & Gilman, Inc. (MFG) 1994d. Technical Memorandum re Lead Concentrations of Tailings, December 12, 1994.

McCulley, Frick & Gilman, Inc. (MFG) 1992. Bunker Hill Superfund Site Remedial Investigation Report. Prepared for Gulf Resources and Chemical Corporation/Pintlar Corporation. May 1, 1992.





APPENDIX A

OCTOBER 27, 1994 LETTER RE  
ANALYTICAL RESULTS FOR BUNKER HILL  
RAILROAD RIGHT-OF-WAY (ROW) SAMPLING

DECEMBER 27, 1994



providing environmental  
consulting and  
engineering services

**G**  
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October 27, 1994

Mr. Michael Thomas  
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Division of Environmental Quality  
1410 North Hilton, Second Floor  
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**RE: Analytical Results for Bunker Hill Railroad Right-of-Way (ROW) Sampling**

Dear Mike:

Attached, for your review, are analytical results from sampling efforts conducted along the railroad ROW (RROW) in the Bunker Hill Superfund Site on September 15 and 16, 1994 (see Table 1). Based on previous sampling results from efforts by UPRR, IDHW, and the Bunker Hill Remedial Investigation, it was assumed that concentrates are not widely distributed through the ballast profile beyond those areas where they are visually evident. The lead results summarized in Table 1 indicate that this assumption is incorrect. The results reveal that concentrates are present in certain areas where they are not visually evident, though lead concentrations in such areas are typically lower than in those areas where concentrates may be visually distinguished. The sampling program results also indicate that concentrates are integrated in the ballast profile at some locations along the RROW. The remainder of this letter provides detailed discussion of the sample results and a revised sampling/remediation approach for potential inclusion in the Railroad ROW Remedial Action Work Plan.

Visual Identification of Concentrates

Samples from areas where concentrates were visually identified on the surface of the ballast are designated by the letter C in Table 1. The average concentration for the C-Series 0- to 2-inch depth samples is 161,612 ppm lead versus the non-concentrate (NC) 0- to 2-inch sample average of 41,360 ppm lead. However, there is considerable variability within both sample sets. Some samples directly from obvious piles of concentrates are in the 10,000 to 50,000 ppm lead range, while others are well in excess of 100,000 ppm. Visually identifiable areas of concentrates indicate little dilution by soil; therefore, lead concentrations would be expected to be in excess of 100,000 ppm. The lower lead value concentrates may be indicative of non-lead concentrates. Although these results indicate that concentrates can be visually identified, the results also indicate that concentrates that are not visually obvious are interspersed with ballast in other areas.

Another consideration for these sample results is that they represent the 80-mesh fraction per the Bunker Hill sampling and analysis protocol required for Area I ROW. In the case of samples collected from areas of visually identifiable concentrates, the average percentage passing the 80-mesh sieve (0-2 inch depth) was approximately 18 percent, while for the non-concentrate samples, the average is



Mr. Mike Thomas  
October 27, 1994  
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approximately 12 percent. These sieve analysis results indicate that the concentrates probably make up a relatively small percentage of the volume of the ballast profile as the sample depth increases.

#### Concentration with Depth

Although the general trend for samples from areas of visually identifiable concentrates is a decrease in concentration with depth, elevated concentrations locally persist below 2 inches and, in some instances, down to the 12- to 18-inch depth interval. Some of the elevated lead concentrations observed in the 6- to 12-inch and 12- to 18-inch depth intervals are due to the presence of tailings. Distinct deposits of jig tailings were observed at several locations. However, maximum concentrations for relatively pure deposits of jig tailings are expected to fall within a 50,000 to 70,000 ppm lead range. At some locations, the 6- to 12-inch and 12- to 18-inch depth interval samples are above this maximum range for jig tailings, thus indicating that concentrates may be present locally at these depths. The presence of concentrates at depth is most likely due to two primary factors:

1. Historical repairs of track sections, which probably included addition of new ballast or other fill; and
2. Downward physical migration of particles through the ballast profile, as accelerated by infiltration and vibration of the rail bed during train passage.

#### Course of Action

The results presented in Table 1 indicate that our previous sampling approach, consisting of visual identification of hot spots with confirmation sampling, is inappropriate. The findings also indicate that elevated lead levels are present at depth, which likely will necessitate the removal of railroad ties as part of the ROW remediation. Given these findings, a revised sampling/remediation program has been developed, as summarized below.

- Prior to other activities, visually identifiable piles of concentrates along the surface of the ROW will be removed to minimize the potential for disturbance.
- Dust control activities will be conducted annually, as needed, until railroad line abandonment has been approved. (Please note that dust control agents were applied during October to key ROW segments.)
- After abandonment approval, all ties will be removed for disposal in one of the Site closure areas made available to UPRR by EPA. Each tie will be cut into three pieces, utilizing Union Pacific Railroad's automated track dismantling equipment, prior to disposal. The ties will be delivered to a staging area or specific closure area within the Site to be designated by EPA/IDHW.

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Page 3

- Composite sampling over the length of the RROW will be used to guide remediation (excluding the Concentrator area where removal will occur). An example schematic of the composite sampling plan is attached (Figure 1). The RROW will be divided into three linear portions (strips) for sampling purposes: the central strip of the RROW, which comprises the track and ballast bed, and the remainder of the RROW on either side of the central strip. The typical width of the ballast is consistent with the width of the ties (eight feet) plus two feet on either side, for a total width of 12 feet. For conservatism, the width of the central strip will be at least 15 feet. In non-typical areas, the width of the central strip will be the ballast-surfaced area plus two feet on either side. The adjoining side strips will comprise the remainder of the RROW.

As an example, in a typical area, the RROW is 100 feet wide and the ballast-surfaced area is 12 feet wide, the central strip will be 15 feet wide and the adjoining side strips each will be 42.5 feet wide (see Figure 1). For areas where double tracks are present, the center strip will be the width of the ballast-surfaced area plus two feet on either side. A site plan that shows total ROW width, strip widths, and sampling locations will be prepared for each 1,000-foot segment of the RROW.

- Subsamples will be collected along the center of each strip at a spacing of every 50 feet. For the central strips, subsamples will be collected from areas between the rails where concentrations are expected to be highest. For areas where double tracks are present, samples from the central strip will be collected alternately between each set of rails. At each location, subsamples will be collected at depth increments of 0 to 6 inches, 6 to 12 inches, and 12 to 18 inches. Three composites of 20 subsamples will be prepared for every 1,000-foot increment of each strip by combining subsamples from like depths. Sample locations will be shown on the site plan for each 1,000-foot segment of the RROW.
- Using this approach, and assuming that approximately 35,000 feet of RROW within the Site requires sampling, approximately 315 composite samples (35 samples from each of the three depth increments for the three strips) would be submitted to a laboratory for lead analysis.
- The depth of removal required for each 1,000-foot strip will be based on the lead concentrations found in the composite samples from its 0 - to 6-inch, 6- to 12-inch, and 12- to 18-inch depth increments. The need for removal will be based on a threshold lead concentration of 30,000 ppm, which is representative of jig tailings. For example, if the 0- to 6-inch interval in a given strip is 10,000 ppm, the 6- to 12-inch interval is 60,000 ppm, and the 12- to 18-inch interval is 20,000 ppm, removal for the 1,000-foot strip would occur to a depth of 12 inches. The maximum depth of removal in any case will be 18 inches.

Mr. Mike Thomas

October 27, 1994

Page 4

- Verification analysis will be implemented using field XRF, or other method jointly selected by EPA/IDHW and UPRR, in areas where removal has occurred.
- Testing for Principal Threat characteristics will be based upon a composite sample which includes 1/4-inch or less sieve fraction.
- Barrier placement will occur as currently described by the Railroad ROW Remedial Action Work Plan. This will result in a 12-inch barrier over soil with concentrations in excess of 1,000 ppm adjacent to residential properties and a 6-inch barrier in other areas where a 2,500 ppm concentration criteria is exceeded.

Please contact us should you have any questions regarding the attached sample results. We would be pleased to discuss our proposed sampling/remediation approach with you and other IDHW or EPA personnel. UPRR would like to resolve these issues and come to a timely conclusion of the Consent Decree process. A meeting to discuss the proposed approach and to come to agreement on the Railroad ROW Remedial Action Work Plan content would be the most effective way to proceed. Please contact us to schedule such a meeting.

Sincerely,

MCCULLEY, FRICK & GILMAN, INC.



Steven A. Werner

Principal Environmental Engineer

SAW:bgh

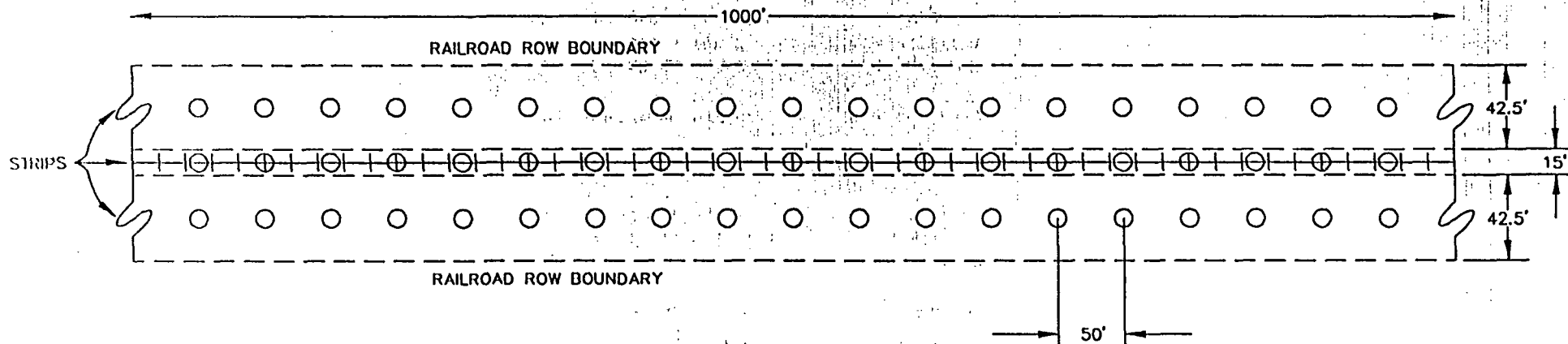
cc: Nick Ceto - EPA  
Tom Bourque - Terragraphics  
Bob Markworth - UPRR  
Nancy Roberts - UPRR  
Bob Lawrence - Parcel, Mauro, Hultin & Spaanstra  
Wesley DeKlotz - AGI  
Tony Chavez - MFG

Table 1

## LEAD RESULTS (ppm) AND #80 SIEVE ANALYSIS (% PASSING)

Sample ID	Location	0-2 in		2-6 in		6-12 in		12-18 in	
		ppm	%	ppm	%	ppm	%	ppm	%
NC-1	Elizabeth Park	30,600	16.3	18,300	5.32	183,000	0.47	80,100	1.6
NC-2	Ross Ranch	99,000	6.8	110,000	4.2	105,000	2.4	154,000	1.82
NC-3	E. Kellogg	42,100	11.4	89,400	5.68	44,700	3.88	6,490	5.3
NC-4	E. Smelterville	43,400	8.9	59,300	6.12	39,000	4.50	69,900	1.82
NC-5	W. Smelterville	25,600	8.94	60,400	7.28	29,800	6.20	47,200	4.43
NC-6	Pine Creek	7,460	17.9	9,050	6.02	35,000	3.90	24,400	3.24
Sample Mean		41,360	11.7	57,742	5.8	72,750	3.6	63,682	3.0
Standard Deviation		31,114		39,164		60,648		52,060	

Sample ID	Location	0-2 in		2-6 in		6-12 in		12-18 in	
		ppm	%	ppm	%	ppm	%	ppm	%
C-1	E. Kellogg	51,800	11.7	155,000	6.38	67,300	5.56	67,800	3.28
C-2	E. Kellogg	29,900	13.8	52,900	10.6	97,200	3.17	180,000	2.37
C-3	E. Kellogg	10,800	4.14	8,300	3.92	37,100	9.27	3,090	10.0
C-4	C. Kellogg	440,000	19.1	72,400	8.7	25,700	11.6	34,300	5.59
C-5	C. Kellogg	507,000	2.96	28,700	15.8	21,100	15.6	12,000	9.85
C-6	C. Kellogg	457,000	17.0	219,000	19.5	247,000	8.08	90,300	11.2
C-7	W. Bunker Creek	97,100	14.4	104,000	11.2	66,000	7.98	69,100	2.49
C-8	W. Bunker Creek	114,000	26.3	72,200	17.5	72,400	7.36	35,700	2.73
C-9	W. Bunker Creek	30,200	30.2	41,300	16.6	11,200	12.3	8,470	4.50
C-10	W. Bunker Creek	65,400	25.8	43,000	8.70	46,600	3.06	38,200	2.03
C-11	W. Bunker Creek	129,000	30.9	116,000	8.86	89,600	4.95	49,400	2.31
C-12	W. Bunker Creek	7,140	21.5	32,100	15.3	16,400	2.34	4,110	5.74
Sample Mean		161,612	18.2	78,742	11.9	66,467	7.61	49,373	5.17
Standard Deviation		189,276		60,742		63,708		49,788	



## LEGEND

++++ RAILROAD TRACKS AND TIES

○ BALLAST SAMPLE LOCATION

----- 'STRIP' BOUNDARIES

NOTES: SUBSAMPLES FROM THE 0-6", 6-12", AND 12-18" DEPTHS WILL BE COLLECTED AT EACH SAMPLE LOCATION. COMPOSITE SAMPLES WILL BE PREPARED FOR EVERY 1000' INCREMENT OF EACH STRIP BY COMBINING 20 SUBSAMPLES FROM LIKE DEPTHS.

THE WIDTH OF THE CENTRAL STRIP WILL BE 15 FEET OR THE WIDTH OF THE BALLAST-SURFACED AREA PLUS TWO FEET, ON EITHER SIDE OF THE BALLAST WHICHEVER IS OF GREATER WIDTH. FOR DOUBLE-TRACKED AREAS, THE WIDTH OF THE CENTRAL STRIP WILL BE THE WIDTH OF THE BALLAST-SURFACED AREA PLUS TWO FEET ON EITHER SIDE.

FOR DOUBLE-TRACKED AREAS, SAMPLES FROM THE CENTRAL STRIP WILL BE COLLECTED ALTERNATELY BETWEEN EACH SET OF RAILS.

### UNION PACIFIC RAILROAD

Figure 1

### SAMPLING PLAN SCHEMATIC EXAMPLE ROW 1000' SEGMENT

PROJECT: 5186	DATE: October, 1994
REV:	BY: MEG CHECKED:
McCULLEY, FRICK & GILMAN, INC.	
providing environmental consulting and engineering services	

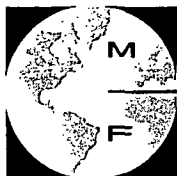




APPENDIX B

DECEMBER 12, 1994 TECHNICAL MEMORANDUM RE  
LEAD CONCENTRATIONS OF TAILINGS

DECEMBER 27, 1994



providing environmental  
consulting and  
engineering services

**G**  
McCulley  
Frick &  
Gilman, Inc.

EPA Region 10 Superfund

**RELEASABLE**

Date 3/7/02  
Initial CV

4840 Pearl East Circle  
Suite 200W  
Boulder, Colorado 80301  
303/447-1823  
Fax: 447-1836

**CONFIDENTIAL SETTLEMENT  
COMMUNICATION**

## TECHNICAL MEMORANDUM

TO: Nick Ceto - Environmental Protection Agency, Region 10  
Mike Thomas - Idaho Dept. of Health and Welfare  
Scott Peterson - Idaho Dept. of Health and Welfare  
Tom Bourque - Terragraphics

FROM: Steve Werner - McCulley, Frick & Gilman

DATE: December 12, 1994

PROJECT: 5186

SUBJ: Lead Concentrations of Tailings

The purpose of this technical memorandum is to provide additional basis for selection of a lead concentration which could be used to distinguish between the presence of tailings and concentrates along the Union Pacific Railroad (UPRR) Right-of-Way (RROW) in the Bunker Hill Superfund Site. UPRR believes it is critical to establish the concentration level in the Remedial Action Work Plan (RAWP), and that sufficient information has been provided to select a concentration level at this juncture.

Selection of a lead concentration is consistent with the Bunker Hill Record of Decision, which requires removal of process materials exceeding concentrations associated with tailings or waste rock. Accordingly, the threshold level should address two objectives:

- (1) removal of process-related materials, such as concentrates, for disposal in the Smelter Complex closure; and
- (2) limiting unnecessary removal of tailings/waste rock.

For the purpose of this memorandum, the emphasis is on tailings, however, many of the discussion points also apply to waste rock. The following key pieces of information were considered in selecting an appropriate threshold lead concentration for tailings:

- The Handbook of Mineral Dressing, Ore and Industrial Minerals (Taggart, 1945) addresses many milling processes and provides specific references to concentrations of jig tailings produced at the Bunker Hill Site by the Bunker Hill and Sullivan Mining

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Company. This document states that tailings from the "jigging" process ranged from 33,000-70,000 ppm (3.3%-7%) lead.

- Jig tailings are a waste product that were produced at the site starting in 1885. Many of the early mills were located at the mouths of gulches, such as Milo Gulch and Government Gulch. Tailings from these mills were deposited near the mills in areas that are now part of the RROW. The UPRR line was constructed in 1888-1889 and construction of the railbed probably covered and thus isolated portions of the jig tailings fans from subsequent disturbance.

- Most of the site flood plain continued to be subject to deposition of jig tailings, and later flotation tailings, until the 1960's. These tailings became mixed with alluvium during transport to and within the valley and were reworked by subsequent flooding and further reprocessing efforts. Tailings/alluvium deposits in flood plain areas such as Smelterville Flats range from one to many feet thick. However, tailings within the railroad bed were isolated from reworking.

- Typical jig tailing concentrations in areas such as Smelterville Flats, where tailings/alluvium mixtures exist, are on the order of 28,300 to 33,800 ppm (2.83% to 3.38%) lead (Table 4-5, Bunker Hill Remedial Investigation Report, 1992). These concentrations reflect a mixture of alluvium, waste rock, and both jig and flotation tailings. The highest concentrations are thought to be linked to more isolated pockets of jig tailings. Recent work by the State trustees in Nine Mile Canyon also identified concentrations of lead around 70,000 ppm (7%) for tailings deposits.

- The highest lead concentrations in jig tailings deposits are expected to be associated with particles with a size range similar to concentrates (predominantly <0.075 mm in diameter). This is thought to be the case because the early jigging process was not very efficient. Although the size fractions between these two materials may be similar, concentrates have historically ranged from 550,000 to 750,000 ppm (55%-75%) lead, which is over an order of magnitude greater than concentrations expected for tailings (3.3%-7%). Therefore, analysis of the -80 mesh (<0.14 mm) fraction should provide a reasonable distinction between lead concentrations associated with tailings versus concentrates.

In consideration of the above information, a threshold lead concentration of 30,000 ppm (3%) lead was selected. This value considers the range of concentrations expected for jig tailings and is based upon the lower end of the range provided by Taggart. In addition, it is supported by the RI sampling, which identified flood plain areas with tailings/alluvium concentrations in excess of 30,000 ppm (3%). Moreover, it is an order of magnitude below the expected lead concentrations for concentrates. Finally, it is important to recognize the function of the 30,000 ppm level. Lead

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COMMUNICATION**

concentrations greater than 30,000 ppm in the RROW will be removed while remaining concentrations below 30,000 ppm will be capped. Both actions are protective and would be conservative in addressing human health risks associated with concentrates while limiting inappropriate removal of tailings.

When evaluating the proposed 30,000 ppm (3%) criterion, the following key components of the RROW remedy must also be considered:

- removal of visually identifiable concentrate
- sampling of the ballast/soil in the RROW
- removal of ballast and soils with concentrations greater than 30,000 ppm (3%)
- real-time verification sampling for 30,000 ppm (3%) criterion
- barrier placement
- long-term operations and maintenance
- Institutional Control Program (ICP)

These aspects of the remedy serve to support the effectiveness of the proposed criterion. In developing the proposed criterion, much information was considered. If you would like to discuss any of this information further, we would be pleased to do so. If, after discussion, agreement can be reached on a lead concentration criterion, Union Pacific Railroad is prepared to expedite revision of the RAWP and SOW to be consistent with this memo and our proposal of 12/1/94. Please call if you have any questions or comments.

CC:            Bob Markworth - Union Pacific Railroad  
              Nancy Roberts - Union Pacific Railroad  
              Bob Lawrence - Parcel, Mauro, Hultin & Spaanstra  
              Wesley DeKlotz - Applied Geotechnology Inc.  
              Tony Chavez - McCulley, Frick & Gilman

**Attachment I**

**MOA between EPA and the State**

(Signed original sent)

Memorandum of Agreement  
between  
United States Environmental Protection Agency  
and the  
Idaho Department of Health and Welfare  
Division of Environmental Quality  
for the  
Consent Decree for Stauffer Area and Union Pacific Area  
Bunker Hill Superfund Site

Goal:

The Idaho Department of Health and Welfare, Division of Environmental Quality ("State") and the United States Environmental Protection Agency ("EPA") seek to coordinate resources to oversee the implementation of Remedial Actions at the Bunker Hill Superfund Site. Coordination of oversight activities and enforcement actions taken in accordance with the Bunker Hill Consent Decree ("CD") with Union Pacific Railroad, Stauffer Management Company, and Rhone-Poulenc, Inc. will facilitate the successful completion of certain activities specified in the Records of Decision ("RODs") for the Bunker Hill Site.

This Memorandum of Agreement ("MOA") recognizes the following:

1. The benefit of the State's knowledge, expertise, and extensive involvement in the Bunker Hill Site, as well as the availability of on-site field oversight staff located at the Project Office in Kellogg, Idaho. Additionally, the State has contractor support available to further assist in oversight activities.

2. A combination of EPA and State resources will provide the most effective and efficient remediation of the areas outlined in the CD.

Purpose:

This MOA seeks to delineate the general areas of responsibility of the EPA and the State in connection with implementation of remedial design and remedial actions by the Settling Defendants in the designated areas of the Bunker Hill Site, and to describe the procedures that will be followed in overseeing work conducted by Settling Defendants at the Site.

## Agreements:

This MOA recognizes that the State will play a major role in oversight of remedial design and remedial actions performed by the Settling Defendants in the areas of the Site that are encompassed in a Consent Decree with a group of Settling Defendants for the Bunker Hill Site. While the State and EPA will both have responsibilities for document review and oversight of field activities, it is the agencies' expectation that the State will have primary day-to-day responsibilities for these activities. Recognizing that EPA has the authority to assess stipulated penalties against the Settling Defendants under the terms of the Consent Decree, EPA will work closely with the State to ensure that the activities of the agencies are well coordinated.

1. State Opportunity for Review and Comment: The Consent Decree provides the State with the opportunity for review and comment in a number of instances. The agencies expect that the State's review and comment will provide the basis for most of the agencies' decisions under this Consent Decree and, therefore, is a significant responsibility which the State accepts and EPA respects. The agencies agree that any disagreements arising from the State's role in reviewing and commenting will be referred to the formal dispute resolution procedure provided by Paragraph 5.

2. Deliverable Review/Comment: Unless otherwise agreed, agency comments regarding Consent Decree deliverables will be developed by the State, with EPA input. EPA will make every effort to transmit comments to the State on each deliverable seven (7) days prior to the date a response is due to Settling Defendants. A standard transmittal form, documenting EPA concurrence with the State's compiled comments will be developed to expedite transmittal of comment letters to Settling Defendants. Formal transmittal of the comments to the Settling Defendants will be performed by EPA or by the State at EPA's request. While EPA retains the responsibility for approving all deliverables required by the Consent Decree, and disagreements regarding approval or disapproval of deliverables will be referred to the formal dispute resolution procedure provided by Paragraph 5.

In general, EPA and the State Project Coordinators or designees will work to develop responses to Settling Defendants' deliverables which reflect the view of both agencies. When the EPA and State Project Coordinators or their designees are unable to resolve disagreements following discussion of the disputed issues with their respective supervisors, the matter will be referred to the formal dispute resolution procedure provided by Paragraph 5.

3. Field Oversight: While both EPA and the State have responsibilities for oversight of field activities, the State is expected to provide primary day-to-day oversight because of the availability of the on-site State staff in the Kellogg Superfund Project Office. EPA and the State agree that their respective Project Coordinators or designees have authority to make field decisions on behalf of their respective agencies. The State shall keep EPA updated on field activities and will notify EPA immediately of any significant changes in these activities. In the event there is a disagreement between EPA and the State, such dispute shall be referred to the formal dispute resolution procedure provided by Paragraph 5.

In the event that there is a release or threat of release which constitutes an emergency situation under Paragraph 54 of the Consent Decree, EPA and the State shall coordinate any necessary consultations with the Settling Defendants regarding appropriate response actions to prevent, abate or minimize such release. In the event there is a disagreement between EPA and the State, such dispute shall be referred to the formal dispute resolution procedure provided by Paragraph 5.

Prior to halting work in accordance with Paragraph 47 of the Consent Decree, the State Project Coordinator or designee will, if possible, consult with the EPA Project Coordinator or designee. Immediately upon halting work, the State Project Coordinator or designee will notify the EPA Project Coordinator or designee. The agencies will coordinate to resolve the problem. In the event there is a disagreement between EPA and the State, such dispute shall be referred to the formal dispute resolution procedure provided by Paragraph 5.

4. Stipulated Penalties: Upon identification of a concern during the course of remedial design and remedial action implementation, either agency shall document the concern and may informally request that the Settling Defendants take appropriate action(s). Should efforts at informal resolution fail, the Project Coordinators or designee shall determine if a Notification of Violation ("NOV") should be issued to the Settling Defendants. It will be the responsibility of the agency field staff to promptly bring issues to the attention of the EPA and the State Project Coordinators or designees and to clearly document identified problems. EPA/State consultation of such matters will be conducted within one (1) working day of the time the matter is brought to the attention of the State and EPA Project Coordinators or designees.



If EPA and the State Project Coordinators or designees, agree that a NOV should be issued, EPA will promptly issue the NOV. If EPA and the State agree that issuance of an NOV is inappropriate, the Project Coordinator or designees, may send a letter to the Settling Defendants noting the problem identified and explaining the Agency position on the issue. In the event there is a disagreement between EPA and the State, such dispute shall be referred to the formal dispute resolution procedure provided by paragraph 5.

EPA will consult with the State prior to issuing a written demand for payment of Stipulated Penalties. EPA is responsible for assessing Stipulated Penalties under the Terms of the Consent Decree.

5. Resolution of Disputes: Disagreements between the State and EPA on matters covered by this MOA shall be immediately elevated to the next level of management. If these managers are not able to resolve the disagreement, the issue will be referred to the State Remediation Bureau Chief, and the EPA Superfund Remedial Branch Chief, for joint consultation and resolution. In the event that a joint resolution is not reached at this level of management, the Director of the Hazardous Waste Division, after consultation (if requested and available) with the Division of Environmental Quality Administrator will make a final decision regarding the disputed matter. The Director of the Hazardous Waste Division will make reasonable efforts to resolve the matter within twenty (20) days. And decision of the Hazardous Waste Division Director relating to matters covered by this MOA shall be the final resolution of the dispute. Such decision is not subject to judicial review. Upon request by the State, the Director of the Hazardous Waste Division will document the basis for the decision.

6. Reservations: Nothing in this MOA shall be deemed to limit any authority of the United States, or the State, to take, direct, or order all appropriate action or to seek an order from the Court to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site.

7. Modification and Termination: EPA and the State may modify this MOA upon mutual agreement of EPA and the State. EPA or the State may terminate the MOA upon written thirty (30) days notification to the other party.

8. Effective Date: The MOA shall become effective upon signing by EPA Region 10 and the State of Idaho.

3/13/95  
Date

Randall F. Smith  
U.S. Environmental Protection Agency  
Region 10

2/21/95  
Date

William D. Cory  
State of Idaho  
Idaho Department of Health and Welfare  
Division of Environmental Quality